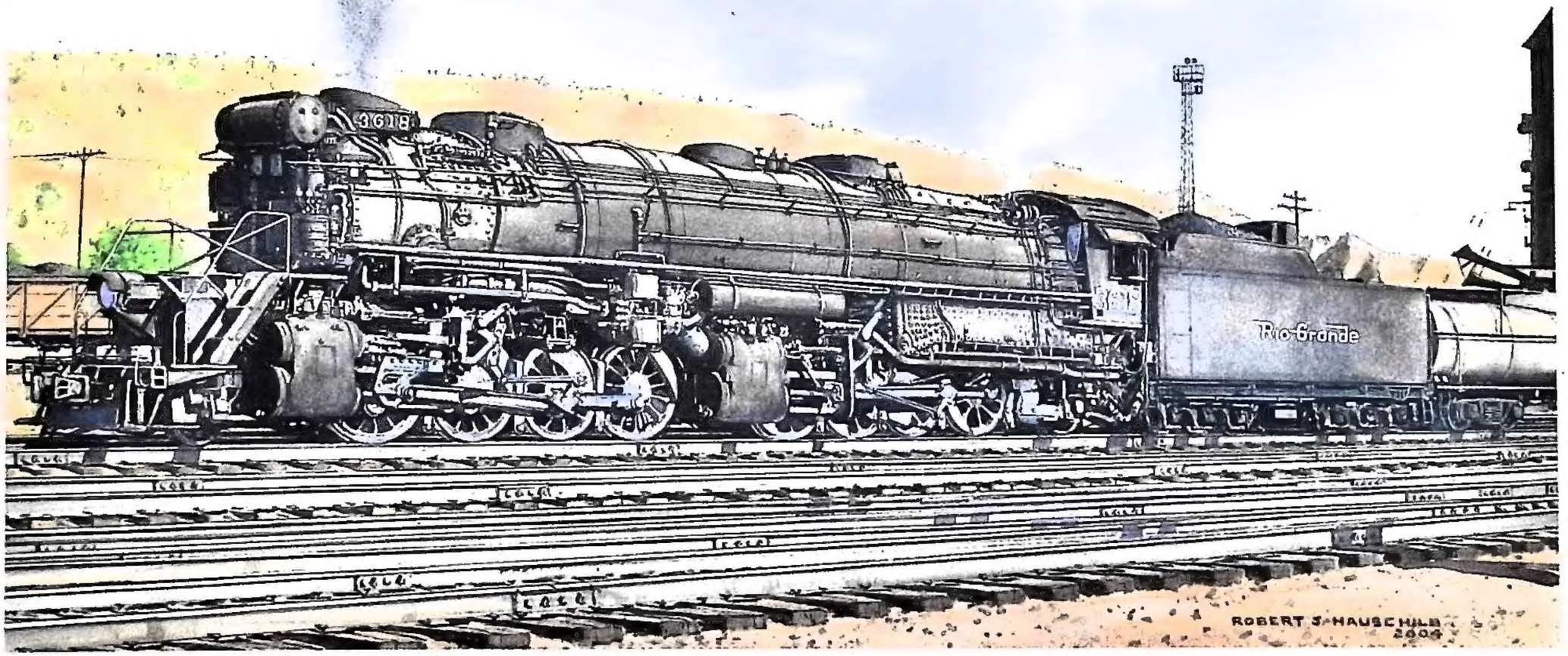

LOCOMOTIVE

The Denver & Rio Grande Western's unique geography played a special role in its motive power development. "Through the Rockies—not around them" was a potent phrase for attracting the tourist trade, but it was also all too descriptive of the special challenges its locomotive roster faced.

Save for a few modest portions of the main line within Colorado, stiff grades and many curves kept power demands high and speeds relatively low. West of Grand Junction, much of the line across Utah permitted faster running, but even here such grades as the climb to Soldier Summit posed major challenges.

Acquisition of the Denver & Salt Lake Railroad offered a shorter route between Denver and Salt Lake City following construction of the Dotsero cutoff. Nevertheless, even this new route via the famed Moffatt tunnel required heavy power that was most effective at low speeds.

These conditions accounted for a higher proportion of Mallets and Simple Articulateds than found on most major railroads. It was a roster well matched to the conditions.

Simple Articulated Pusher. At Helper, Utah, one of the Denver & Rio Grande Western's 3600s—the world's largest engines for a few months when built—waits to assist an eastbound freight en route to Soldier Summit. Water Color by Robert J. Hauschild.

LOCOMOTIVE QUARTERLY

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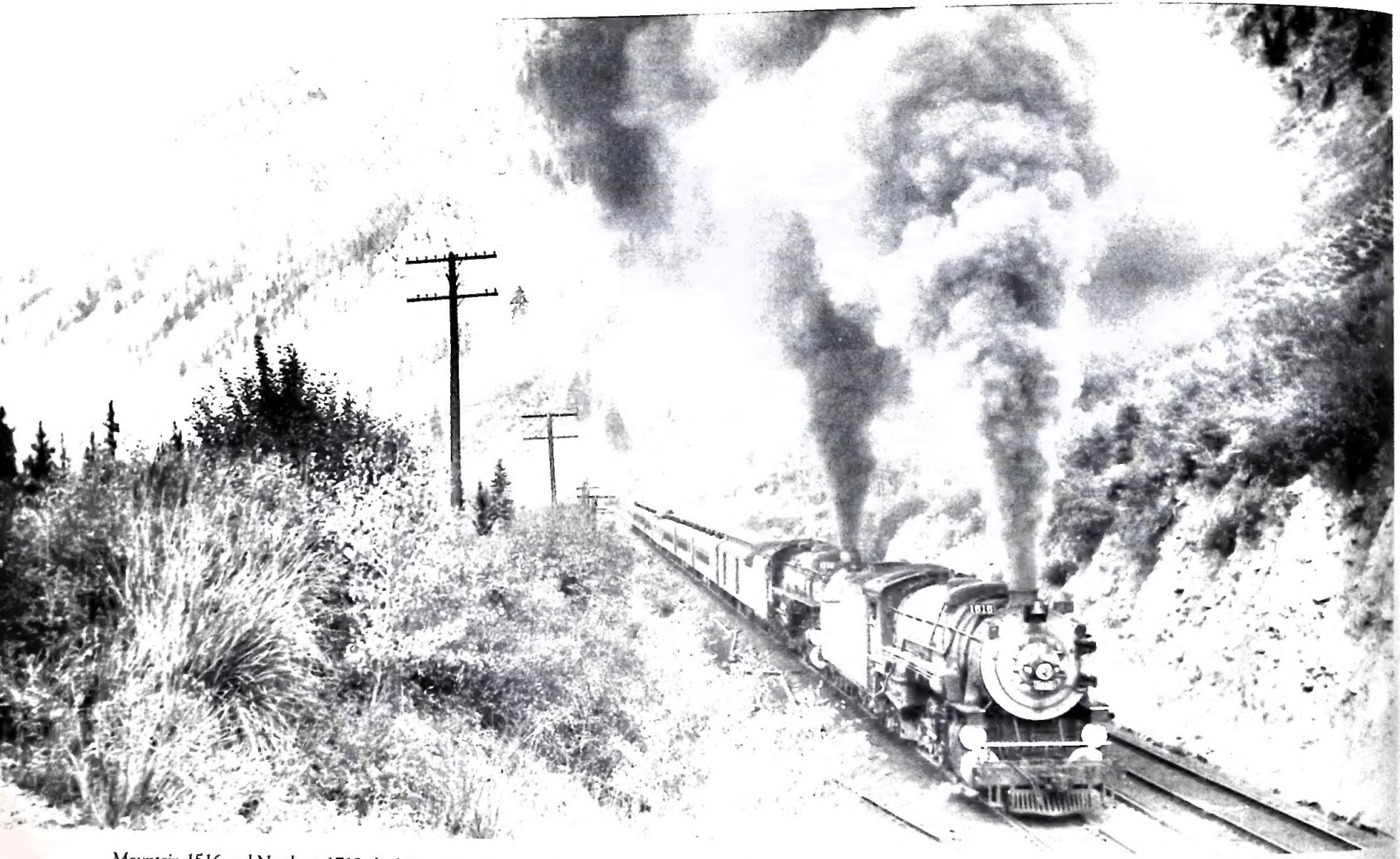
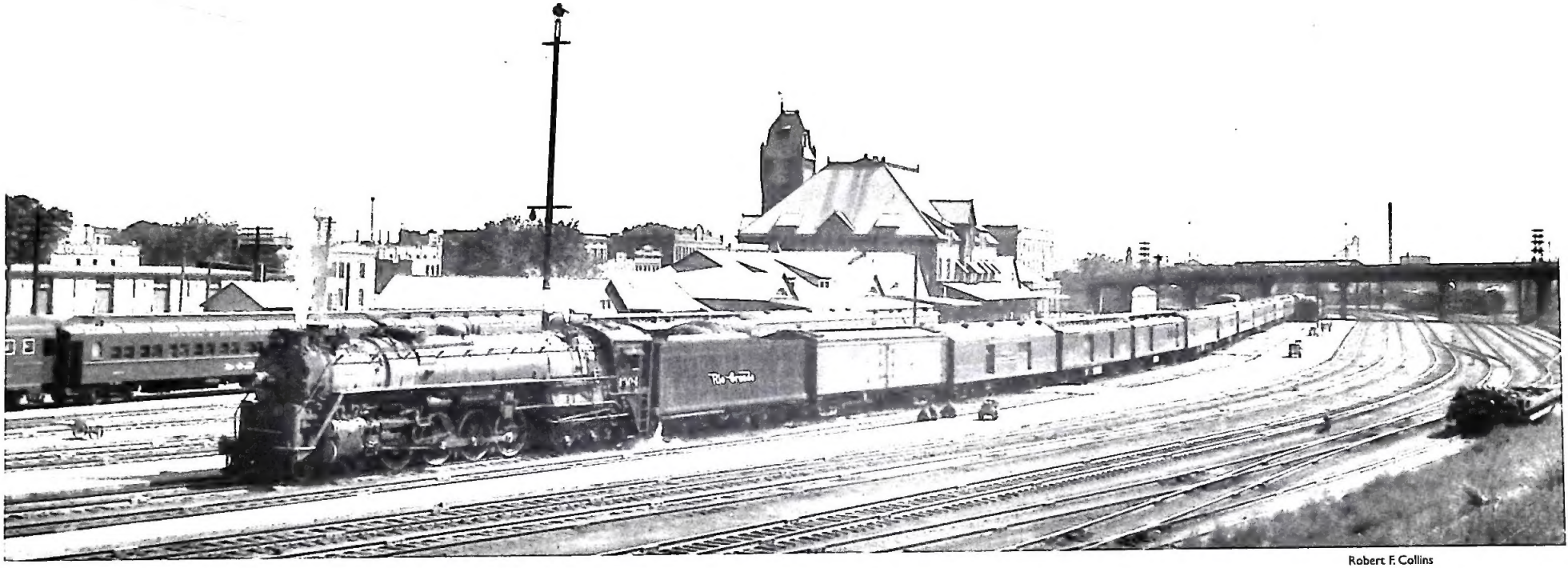
Richard H. Kindig

D&RGW Mountain types 1527 and 1518,near Buena Vista, Colo. move 41 cars at 11:50 a.m. on September 27, 1940 at 40 miles per hour, ready for the climb to Tennessee Pass.



Mountain 1516 and Northern 1712 climb Tennessee Pass out of Minturn, Colo. with 3rd No. 2, an American Legion Los Angeles-New York Special, with nine cars at 25 mph, 1:02 p.m., April 25, 1938

Richard H. Kindig



Robert F. Collins

Northern type 804 pauses at Pueblo, Colo., September 20, 1946 with Train 2, The Scenic Limited.

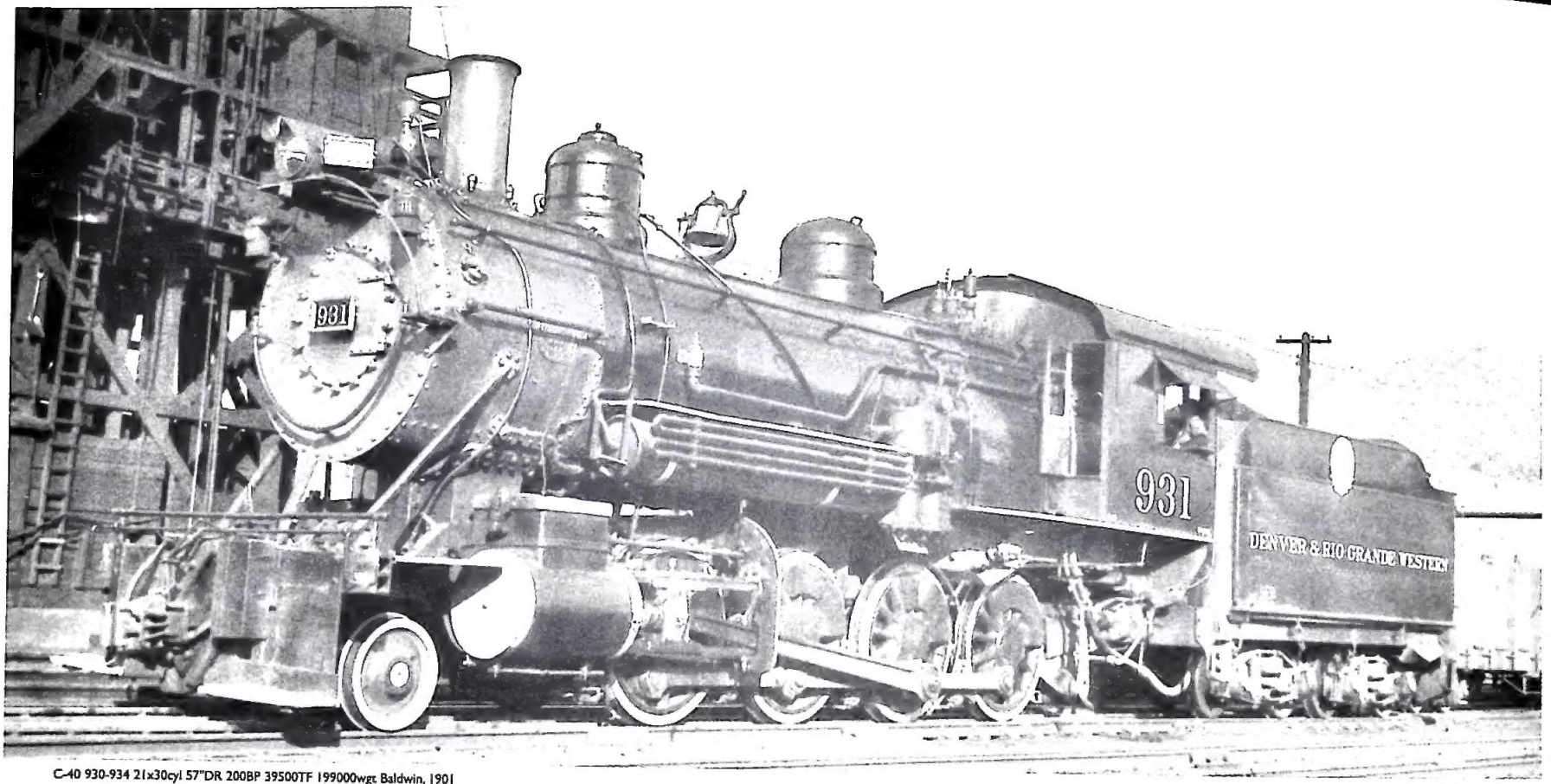
RIO GRANDE STANDARD GAUGE POWER

"Through the Rockies, not around them" was a Denver & Rio Grande Western slogan that attracted tourist traffic. The road's scenery was a passenger department asset, but steep grades and sharp curves created huge costs. Over the years, D&RGW engine mileage far exceeded train mileage, thanks to pushers, doubleheaders, and engine deadhead movements that this mountain railroad required.

In the early 1900s, the Denver & Rio Grande became virtually two separate physical operations. Though through routes had been standard gauged, a large narrow-gauge network served parts of western Colorado and northern New Mexico. Narrow gauge power was reviewed in the Spring 1983 and Fall 1998 Locomotive Quarterlies, the latter still available.

Despite a turbulent financial history, Rio Grande motive power saw steady progress. Early 1900s brought several 2-8-0 classes, notably the large group of engines that became Class C-41, Numbers 1000-1029 in the 1924 renumbering. Baldwin Compounds delivered in 1902, they were simpled within a few years. Superheated later, they retained their Stephenson valve gear and were rated at 40,893 pounds tractive force.

During 1906 and 1908 Alco-Schenectady supplied 68 heavy Consolidations. They offered 48,100 pounds tractive force, but freight trains ascending Colorado's Tennessee Pass or climbing Utah's Soldier Summit grade still employed five engines. In time, larger engines displaced the 2-8-0s in this work, after which they were utility power for mine runs, local freights, and



C-40 930-934 21x30cyl 57"DR 200BP 395000TF 199000wgt Baldwin, 1901

Robert F. Collins

At Salida, Colo., August 17, 1939, Engine 931 is one of five C-40 Consolidation types built for the Rio Grande Western by Alco-Richmond in 1901.

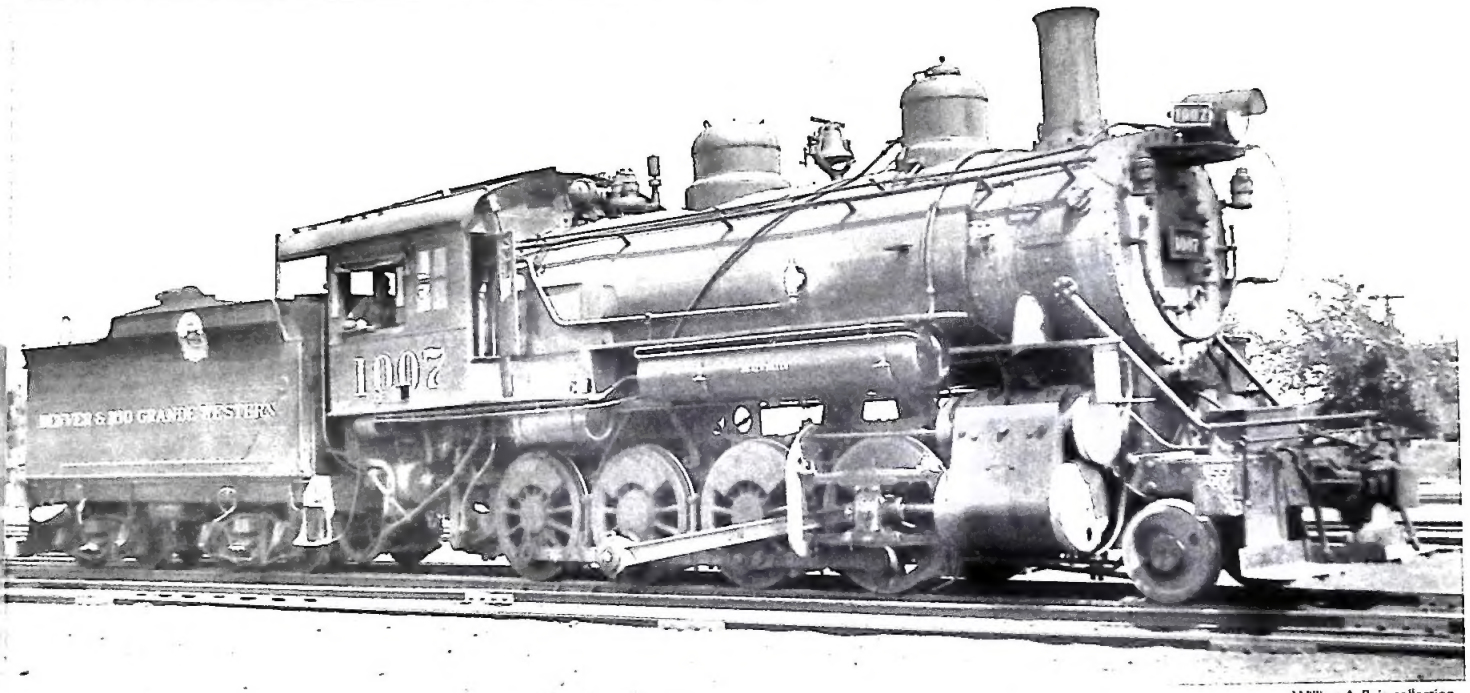
switching. In the 1924 renumbering, they became C-48 class Engines 1131-1178, 1180-1199.

Most C-48s initially had Stephenson motion, but the final group (1151-1178) was split between Baker and Walschaert valve gears. All were superheated in due course with Stephenson-geared engines switched to Walschaert motion.

Alco-Schenectady delivered Ten Wheelers 760-793 during 1908-1909. These 67-inch drivered engines headed main line passenger runs in the final era of wooden cars. Later years saw them handling lighter runs and local services. The first two were modified with 63-inch drivers for branch line mixed trains. All acquired superheaters and Walschaert motion.

Following the 1908 D&RG/RGW merger that formed the D&RGW, 1910 brought a major change. Eight Mallet compound 2-6-6-2s (originally 1050-1057, later 3100-3107) entered helper service at Soldier Summit and Tennessee Pass. Rated at 62,066 pounds tractive force, they quickly reduced the number of five-engine trains. Still larger power ultimately caused their transfer to mine runs and local service in Utah.

With the superheater age's dawn, the Rio Grande also turned to road power with trailing trucks. Mikados 1200-1213, 1912 Baldwins, were 63-inch drivered engines with 170 pounds boiler pressure, later lifted to 185 and finally 200, supplying 59,000 pounds tractive

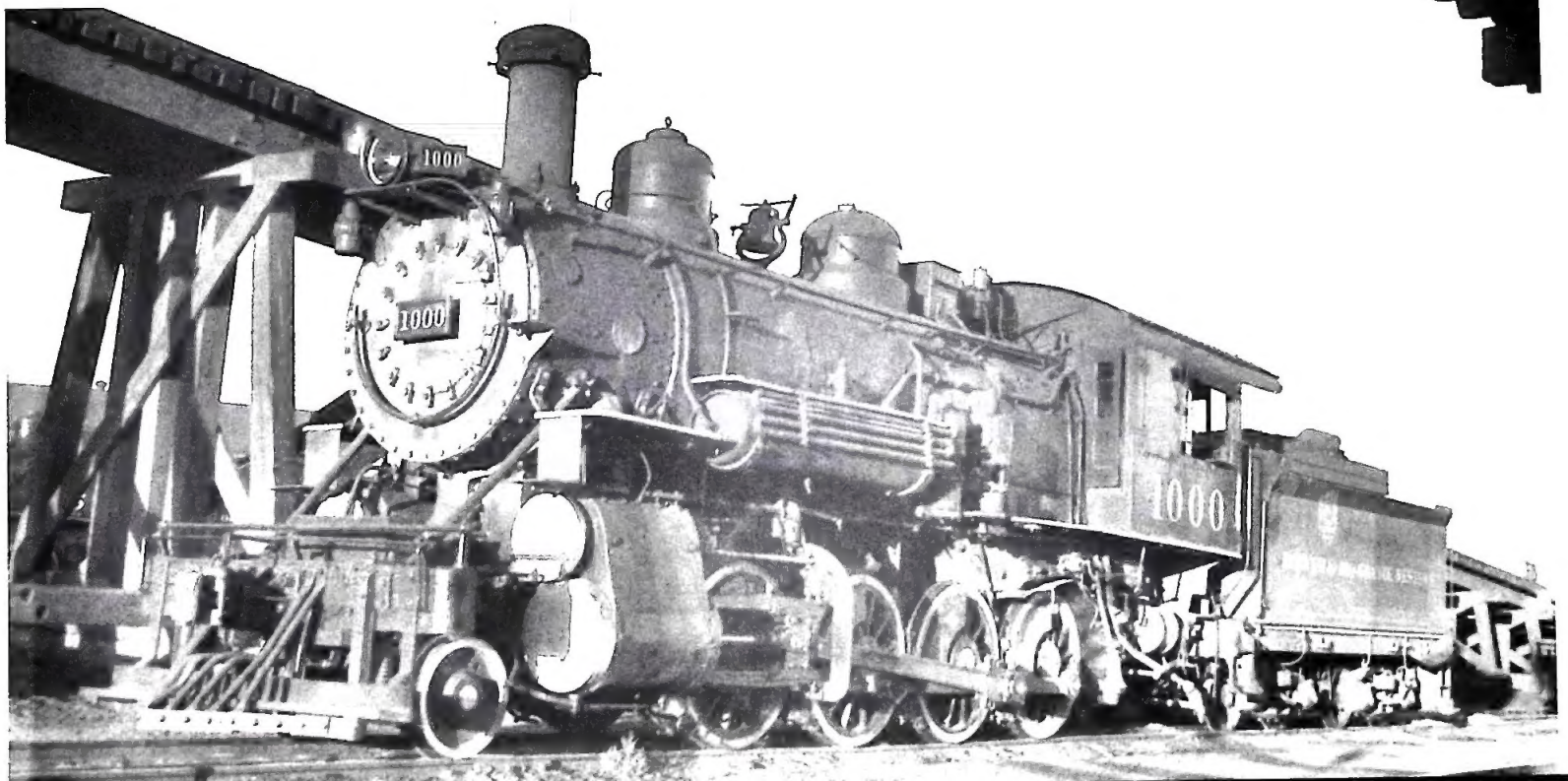


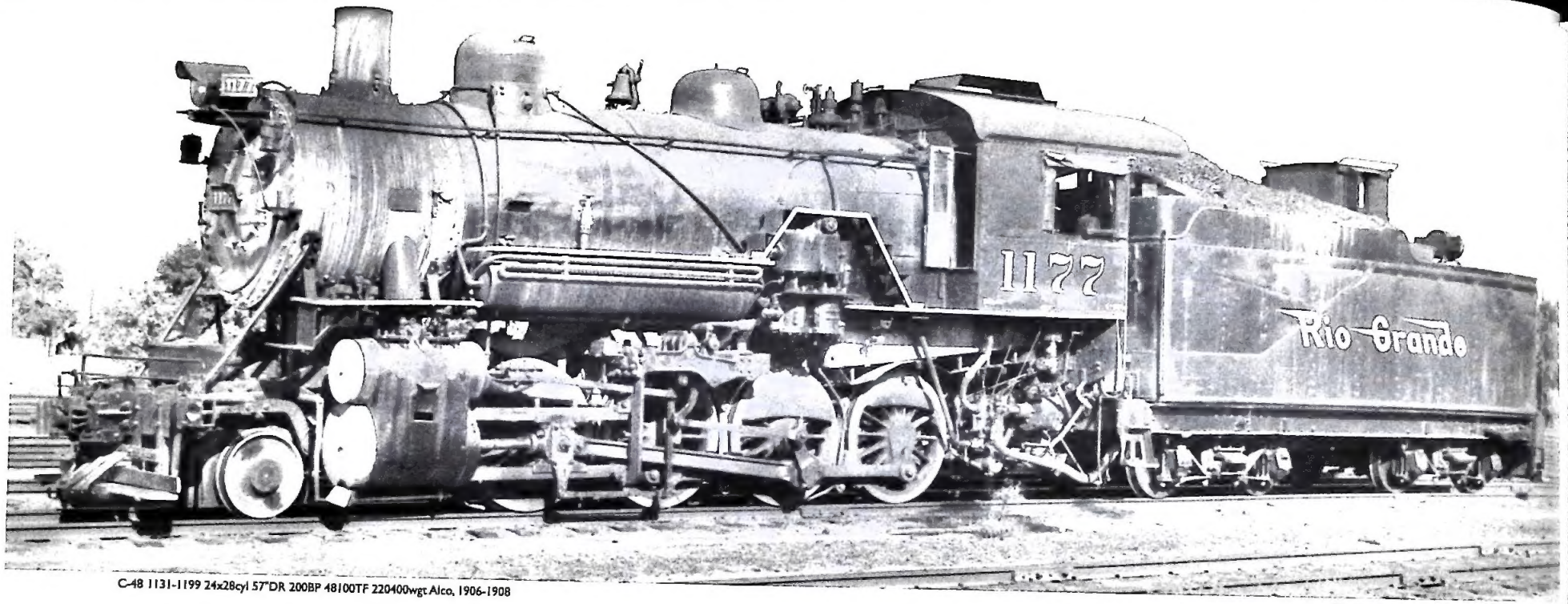
C-41 1000-1029 21x30cyl 55"DR 200BP 40893TF 182000wgt Baldwin, 1902

William A. Raia collection

C-41 Consolidations were rebuilt from Compounds and later superheated, but retained their Stephenson valve gear, including 1007 (above, Denver, September 3, 1938) and the first of the class, Number 1000 (below, Alamosa, Colo., August 15, 1939).

Robert F. Collins



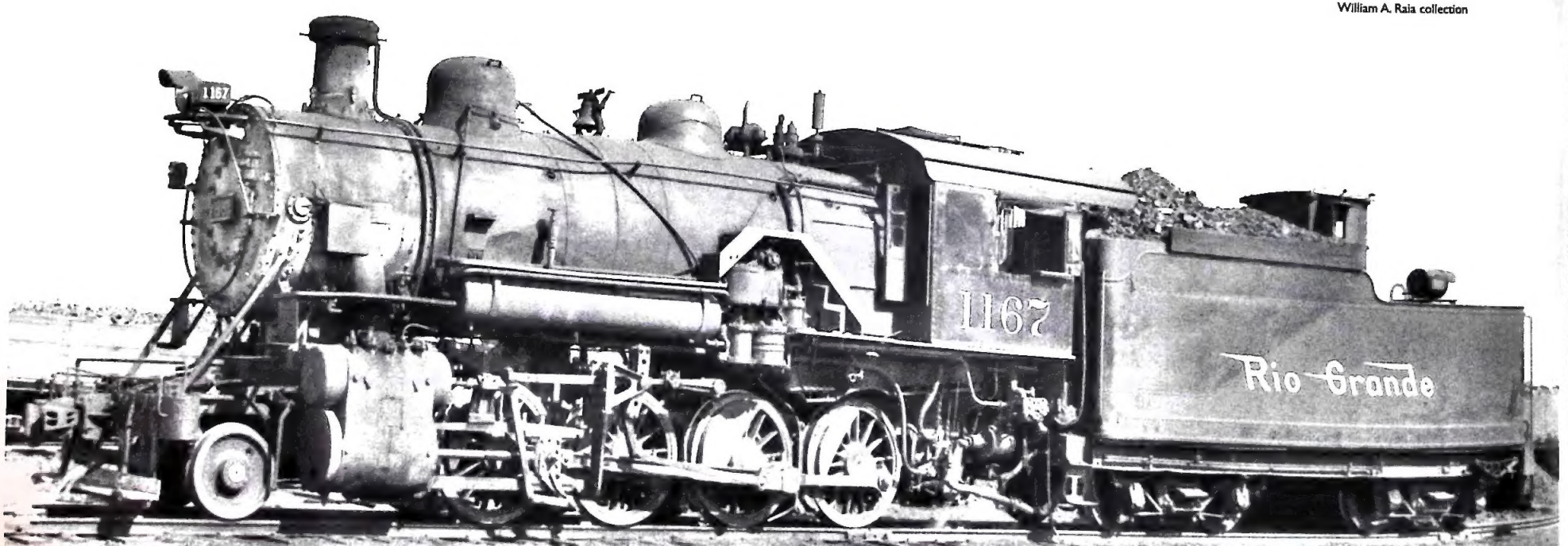


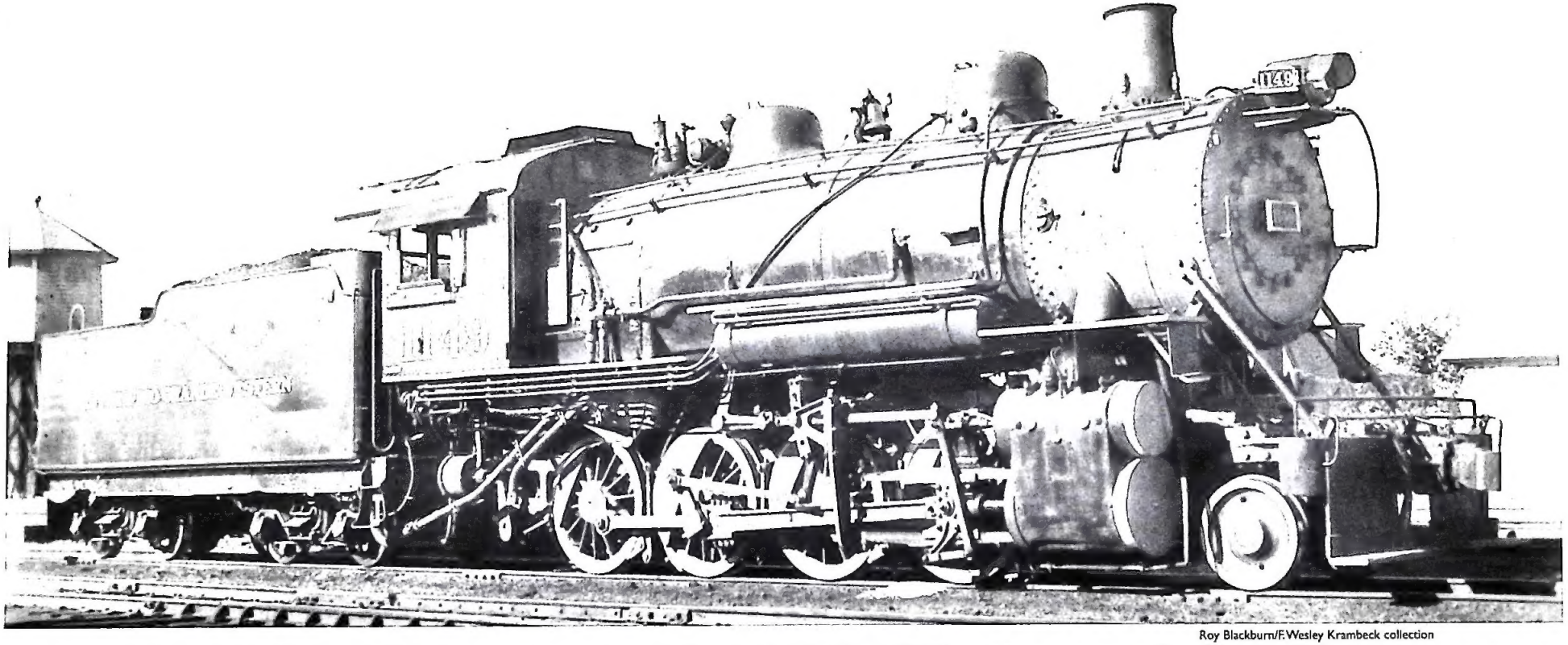
C-48 1131-1199 24x28cyl 57"DR 200BP 48100TF 220400wgt Alco, 1906-1908

William A. Raia collection

Some of the later C-48 2-8-0s came new with Baker or Walschaert valve gear. Baker-equipped engines seen at Denver included 1177 (above, August 20, 1948) and 1167 (below, 1938).

William A. Raia collection





Roy Blackburn/F. Wesley Krambeck collection

C-48 Engine 1149, built new with Stephenson motion, was later superheated and equipped with Walschaert valve gear as seen at Grand Junction, Colo., November 1, 1948.

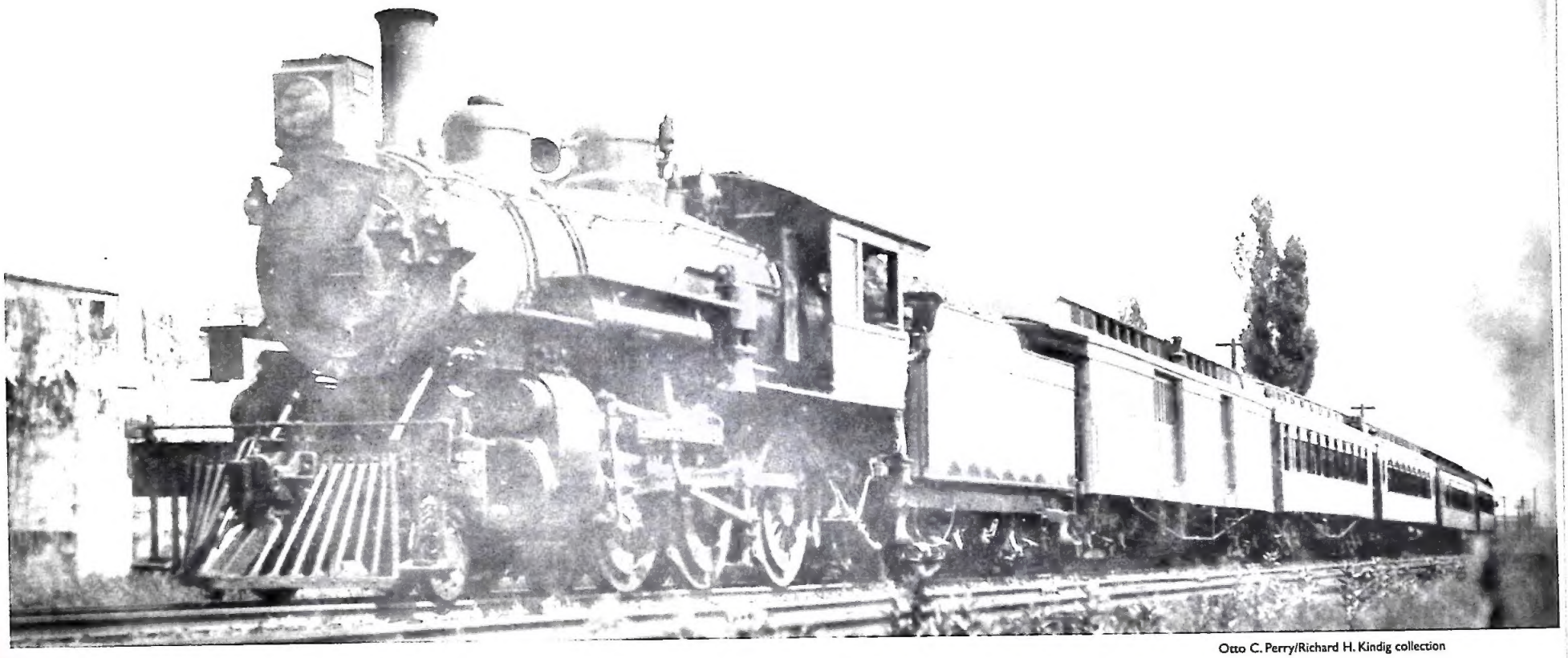
force. On a mountain railroad where speeds were necessarily limited, these nominal freight engines also proved useful on some passenger runs.

In 1913, Baldwin delivered 67-inch drivered Pacifics 1001-1006, later 800-805 (800 formerly 1006). This group, too, saw boiler pressure increases from an initial 185 to 190 to 200 pounds, with a final 44,594 pounds tractive force. First assigned to major passenger trains, larger power displaced them as car weights increased and train consists grew. They enjoyed long careers thereafter on lighter main line runs.

The year 1913 also brought 2-8-8-2 Mallets 1060-1075 (later 3400-3415) from Alco-Schenectady. Initially in road freight service, they soon shifted to helper duties at Tennessee Pass and Soldier Summit where their 95,000 pounds tractive force, more than double that of a C-48 2-8-0, improved operations. Where five-engine trains were once common, the new Mallets made it feasible to work with three.

Three years later came F-81 class Alco-Brooks 2-10-2 Engines 1250-1259 (later 1400-1409). With 63-inch drivers and 81,200 pounds tractive force, they were among the largest Santa Fe type engines. Their principal work became coal haulage in Utah's busy mining region.

No new power came during World War I United States Railroad Administration control. With return to private control,



Otto C. Perry/Richard H. Kindig collection

At Denver in passenger service ca. 1918, Ten Wheeler 755 reflects the class appearance as built.

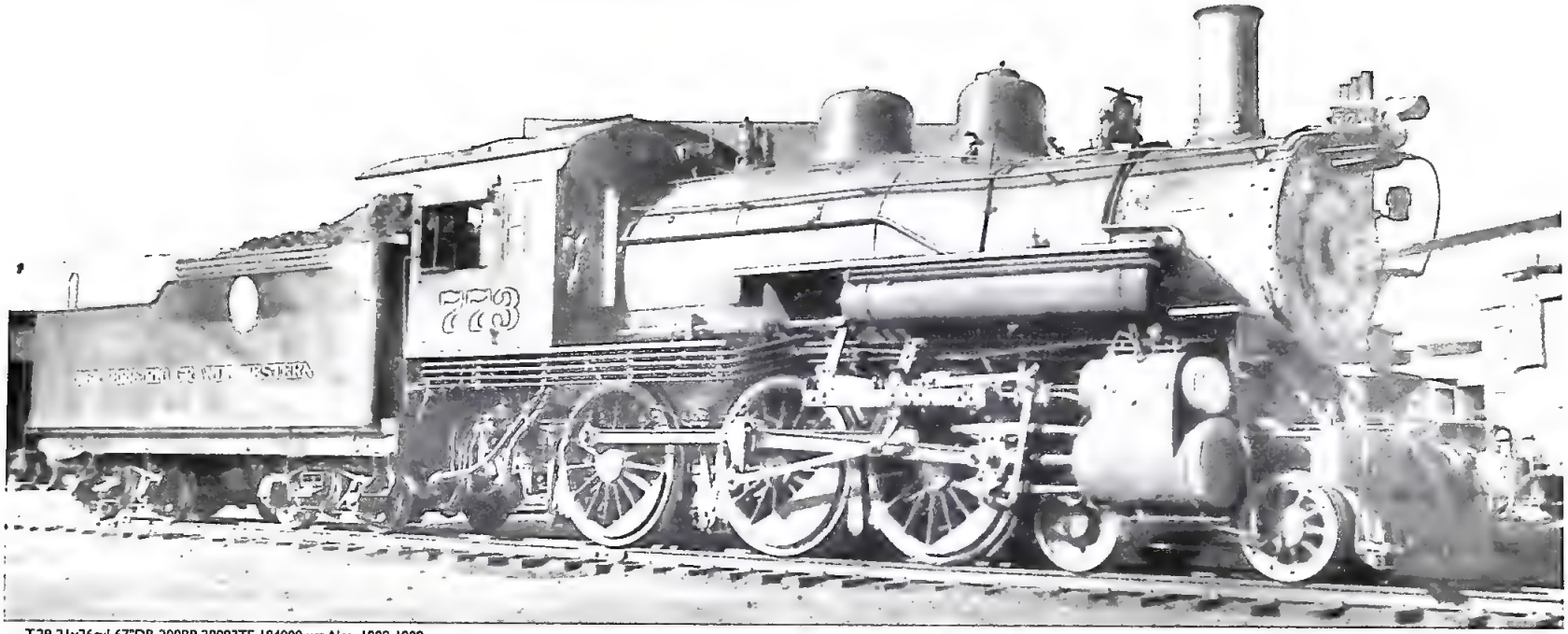
1922 brought heavy Mountain types 1501-1510, 63-inch drivered dual-service engines rated at 66,640 pounds tractive force, well suited to D&RGW's tough terrain.

Pleased with the new 4-8-2s, the D&RGW added two more groups in 1923. Of these, Engines 1511-1520, class M-78, had boosters, while M-67 Numbers 1521-1530 generally matched the first 10 4-8-2s. Overall, the new 4-8-2s reduced passenger and freight doubleheading considerably.

Though the USRA had assigned none of its standard engines to the D&RGW, the company bought ten USRA-design 2-8-8-2 Mallets in 1923. Class L-107, Numbers 3500-3509, hauled coal trains and provided helper service initially in Utah. Later years found their scope widening somewhat, with at least one working over La Veta Pass out of Alamosa, Colo.

A final 4-8-2 group, three-cylindered 1926 Baldwins 1600-1609, with 67-inch drivers, brought power akin to the M-78 Mountains, but with somewhat more speed. Initially in dual service between Denver and Salida, they later were in Grand Junction-Salt Lake City passenger service for some time.

Came 1927 and Alco's Brooks Works supplied Simple Articulated 2-8-8-2s 3600-3609, class L-131. With 63-inch drivers rather than the prior Mallets' 57-inch wheels, they could sustain a little higher speed while reducing the mechanical complexities that made Mallet maintenance costly. Serving first

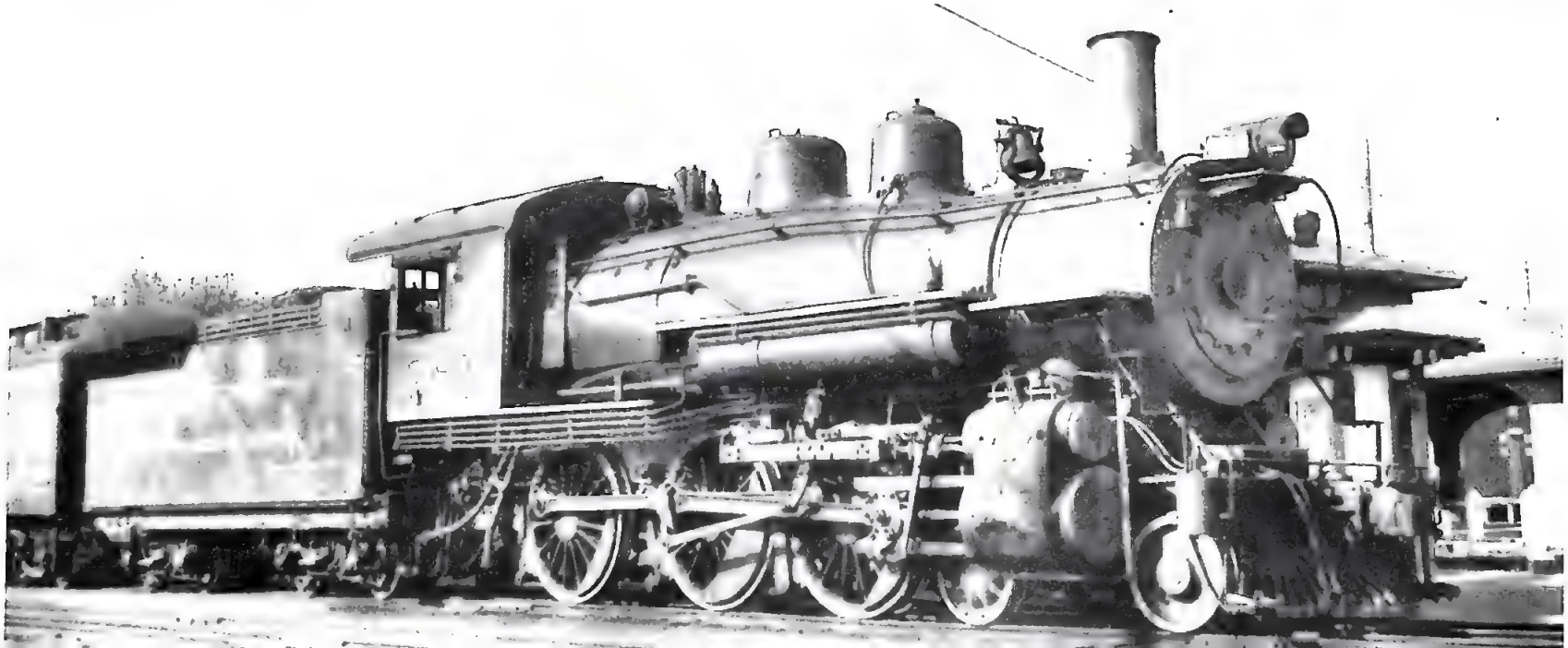


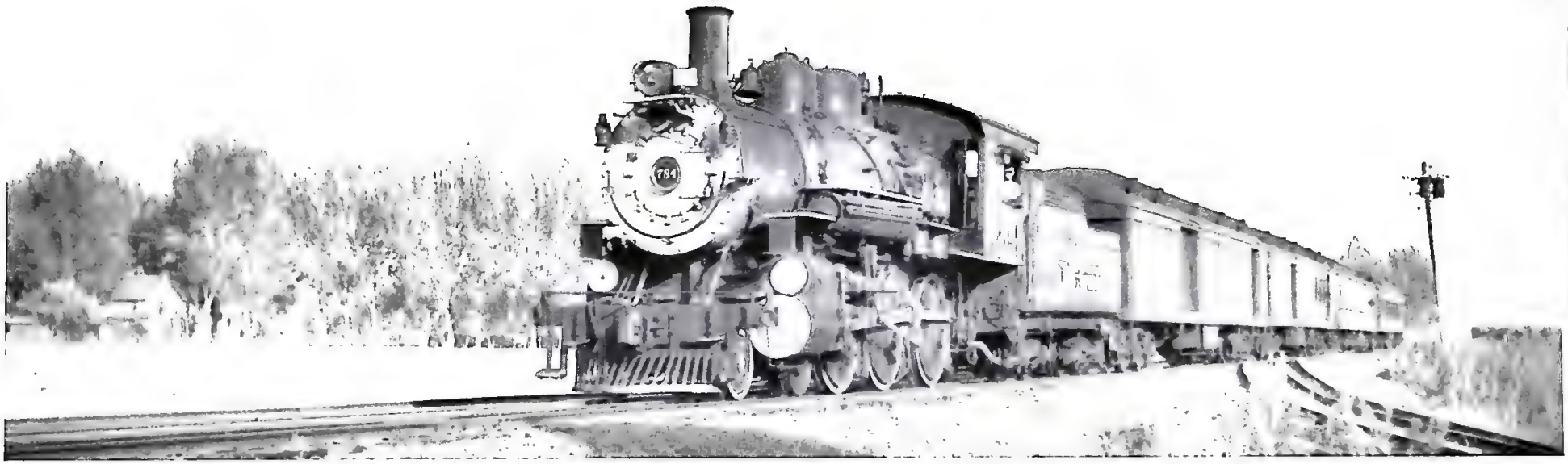
T-29 21x26cyl 67"DR 200BP 29093TF 184000wgt Alco, 1908-1909

William A. Raia collection

Engine 773 (above), at Alamosa on June 16, 1937, still has the forward side window that was later eliminated on Class C-29 as seen on 781 (below) at Montrose, Colo., August 18 , 1939.

Robert F. Collins





Robert F. Collins

C-29 4-6-0 784 arrives at Montrose, Colo. from Grand Junction with Train 320, May 18, 1950.

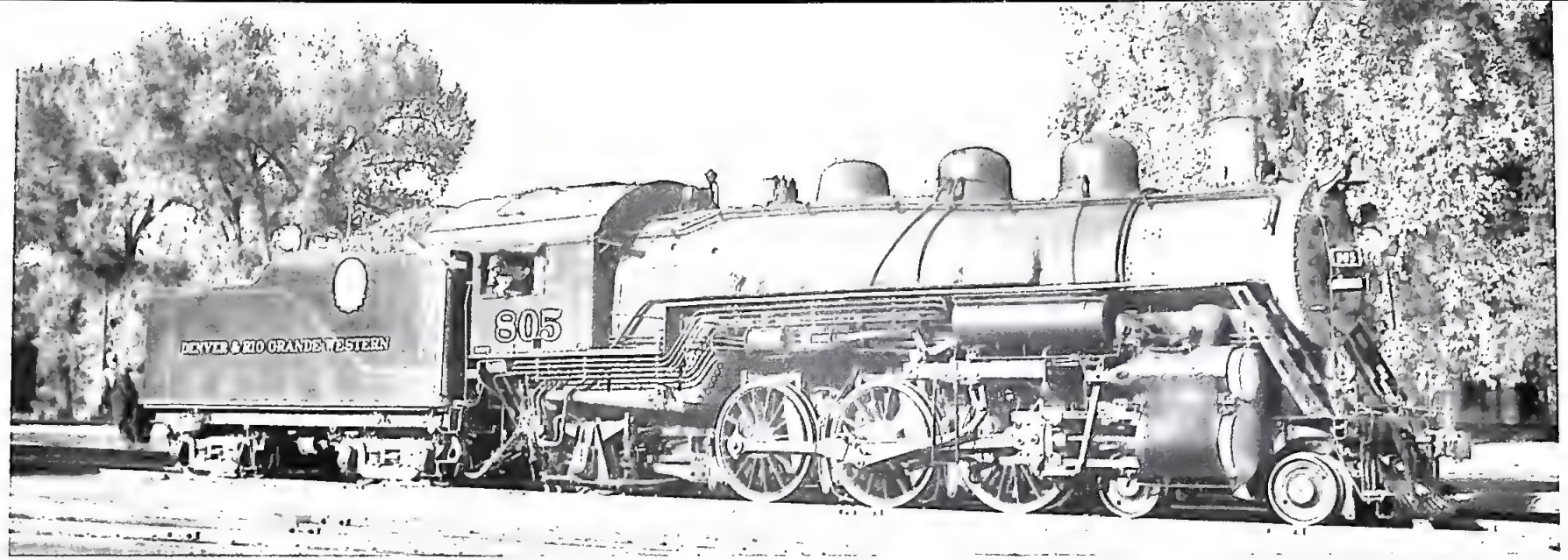
between Salida and Grand Junction, the 3600s reduced the number of engines needed to move freight over Tennessee pass. Alco-Schenectady delivered ten more, L-132 Engines 3610-3619, in 1930.

Growing passenger business led to purchase of 4-8-4 Baldwin Engines 1700-1713 in 1929. With 70-inch drivers, then the road's highest, they could operate without change between Denver and Salt Lake City. Still larger 73-inch drivered Baldwin 4-8-4s 1800-1809, delivered in 1937, further improved passenger operations overall.

A year later, Baldwin supplied 10 heavy 4-6-6-4 Simple Articulateds, L-105 class 3700-3709. Assigned to Grand Junction-Salt Lake City fast freight service, these 70-inch drivered engines also shared passenger duties, frequently handling through runs between Salt Lake City and Pueblo, Colo. Their success led to another five, 3710-3714, in 1942.

Some motive power assignments changed after the D&RGW's acquisition of the Denver & Salt Lake Railroad—the Moffat Tunnel Route—and a new 35 mile-connection between Orestod and Dotsero, Colo., completed in 1934. This established a new route between Denver and Salt Lake City 175 miles shorter than the main line via Pueblo. The D&SL required much upgrading and initially saw only lighter D&RGW power supplementing the D&SL's own aging locomotives. As conditions improved, the older Rio Grande 2-8-8-2s began to appear here and ultimately all classes could traverse the former D&SL between Denver and Orestod.

World War II traffic growth required major additions from



P-42 800-805 26x26cyl 67"DR 200BP 44594TF 261080wgt Baldwin, 1913

Robert F. Collins

Pacific 805 (above) is about to pick up a passenger run at Salt Lake City, August 20, 1939. Pacific 800 (below) leaves Denver with Train 7, August 31, 1940.

Richard H. Kindig

William A. Raia collection

1200-1213 27x39cyl 63"DR 200BP 59000TF 267000wgt Baldwin, 1913

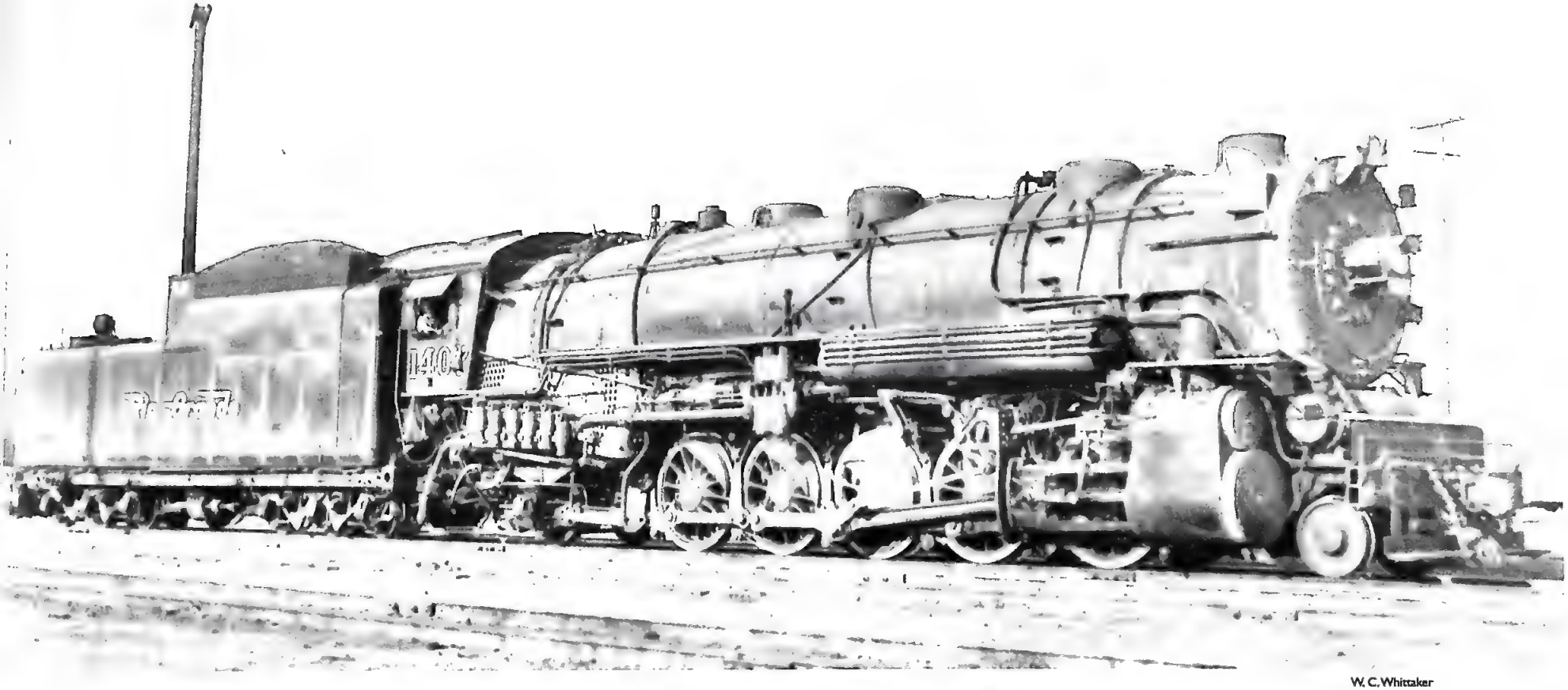
Roy Blackburn/F. Wesley Krambeck collection

Mikado 1202 (above, Denver, September 24, 1956) wears the cut-back cab that was applied to many of the Mikados and Pacifics in later years. Mikado 1207 (right) is at Grand Junction, October 24, 1938.

1400-1409 31x32cyl 63"DR 195BP 81200TF 428500wgt Alco, 1917

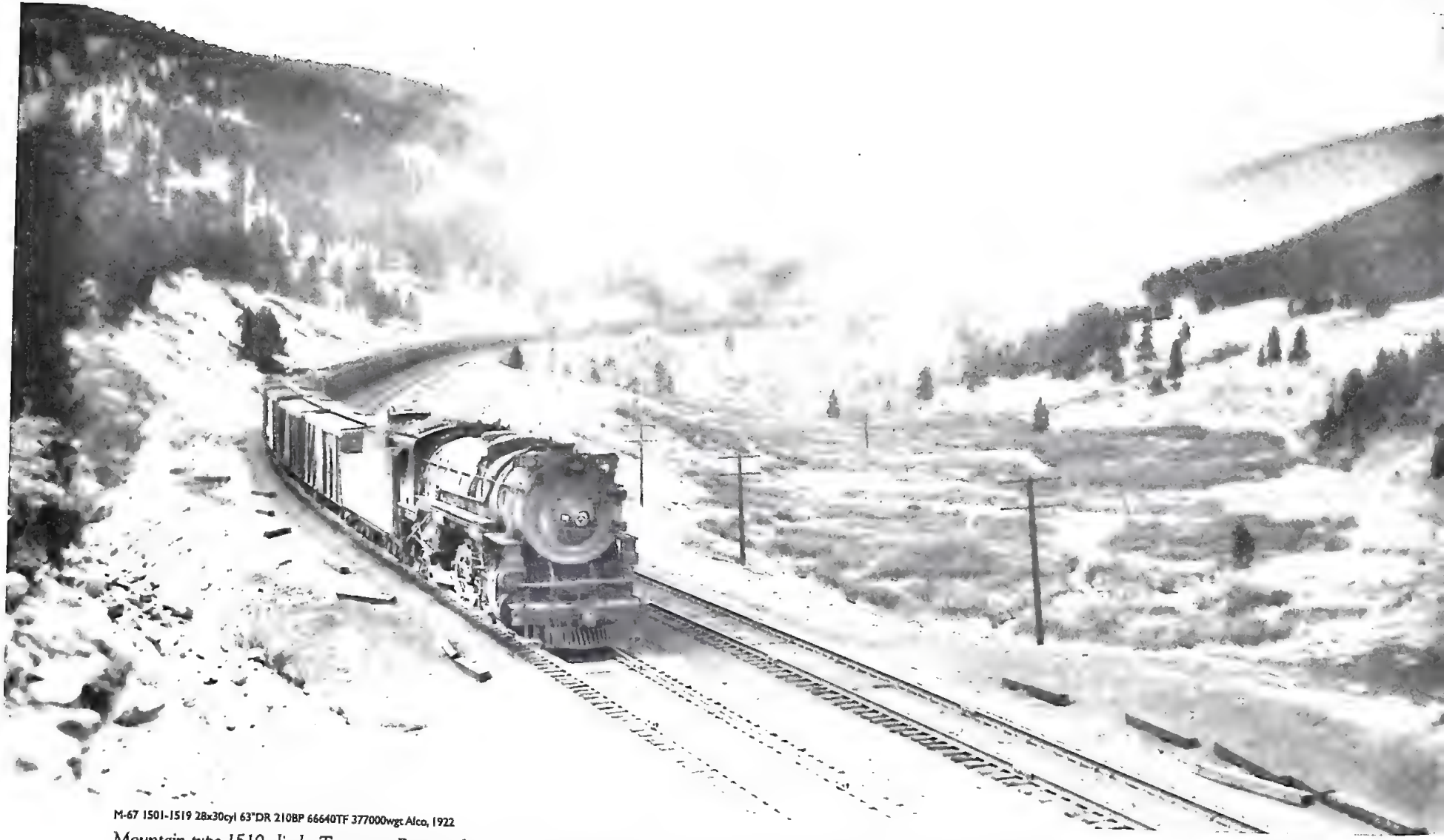
Richard H. Kindig

On an extra west leaving Helper, Utah, Santa Fe-type 1401 pulls out with 65 cars at 10mph on June 28, 1939 pushed by Mallet 2-8-8-2s 3508 and 3504.



W. C. Whittaker

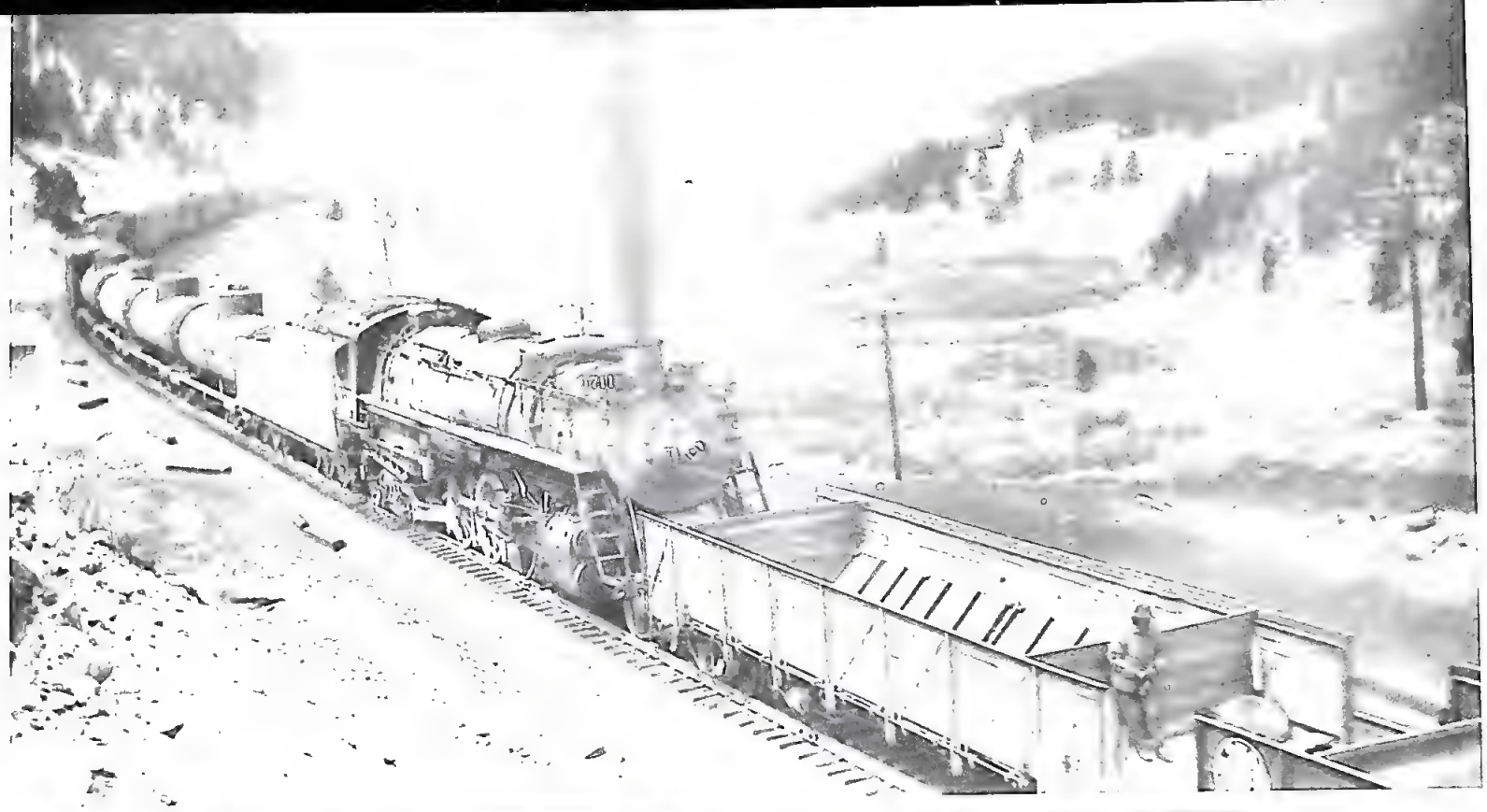
At Ogden, Utah, 2-10-2 1407 has a large ex-Norfolk & Western Mallet tender in place of its original smaller Vanderbilt type, September 27, 1952.



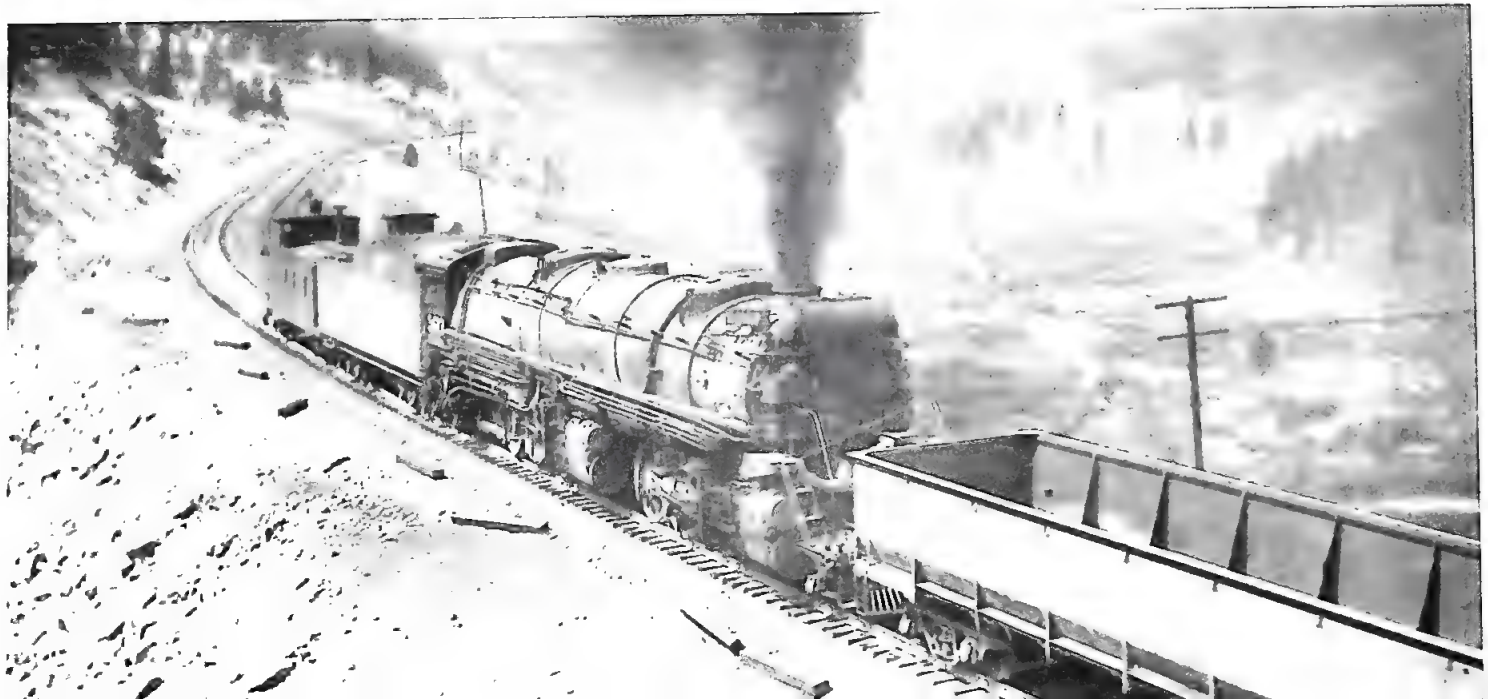
M-67 1501-1519 28x30cyl 63"DR 210BP 66640TF 377000wgt Alco, 1922

Richard H. Kindig

Mountain type 1510 climbs Tennessee Pass eastbound near Mitchell, Colo. with mid-train helper 4-8-4 1711 and Pusher 2-8-8-2 3613, May 16, 1937.
See also next page.



Richard H. Kindig



Richard H. Kindig

Assisting an eastbound freight with Road Engine 1510 (see preceding page) are mid-train helper 1711 (above) and simple articulated pusher 3613 (left), May 16, 1937.

M-75 1511-1520 28x30cyl 63"DR 210BP 66640TF (78967w/booster) 384200wgt Alco, 1923

Robert F. Collins

Mountain type 1519 (above) takes 72 cars northbound at Florence, Colo., September 29, 1946. Mountain type 1522 (below) is at Provo, Utah, September 8, 1945.

M-67 1521-1530 28x30cyl 63"DR 210BP 66640TF 378600wgt Alco, 1923

William A. Raia collection

Richard H. Kindig

Rolling downgrade on the ex-Denver & Salt Lake near Fireclay, Colo., 4-8-2 1516 heads Train 1st 74's 40 cars at 25 mph, September 6, 1942.

M-75 1600-1609 (3)25x30cyl 67"DR 210BP 74970TF 419310wgt Baldwin, 1926

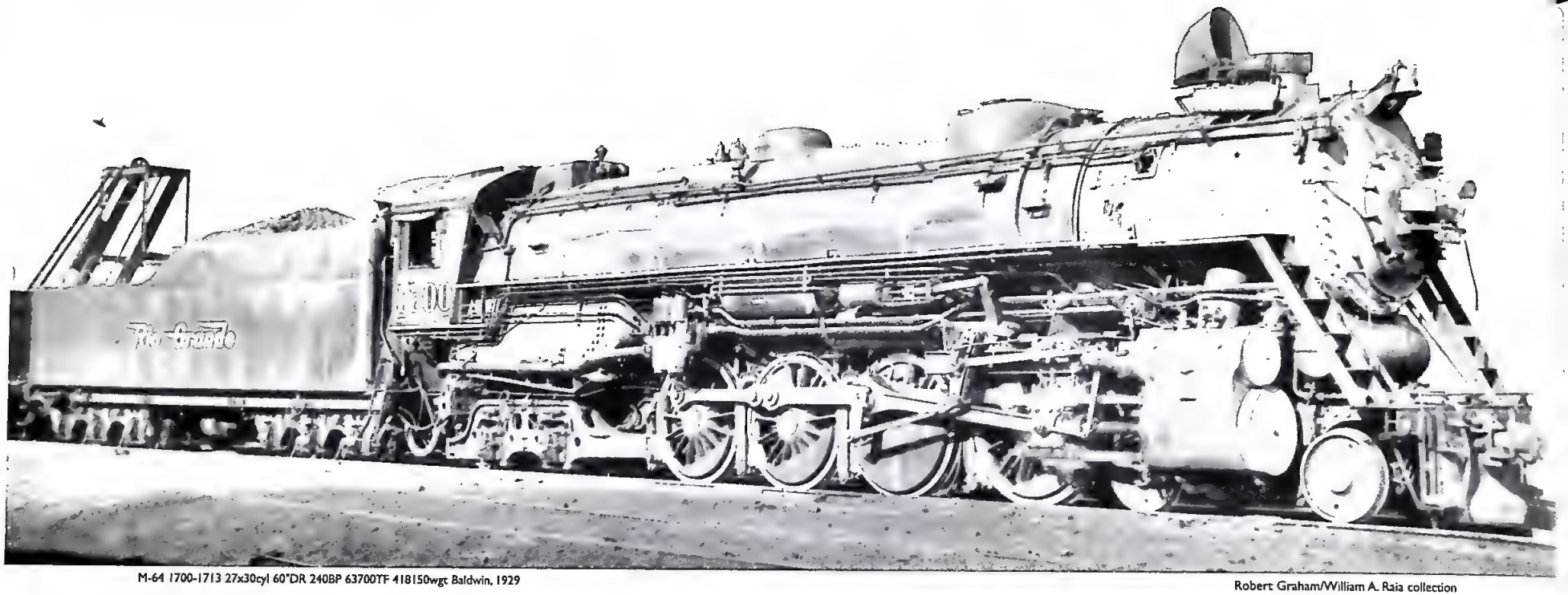
Roy Blackburn/F.Wesley Krambeck collection

The 1600 series three-cylinder Mountain types carried dual Walschaert valve gear on the right side to control the middle cylinder. Engine 1604 (above) is at Grand Junction in 1936. At Helper on June 27, 1939, Engine 1607 (below) is equipped with an Elesco feedwater heater.

Richard H. Kindig

Robert F. Collins

Northern type 1706 climbs Tennessee Pass near Pando, Colo. on May 22, 1950 with Train 2, The Scenic Limited

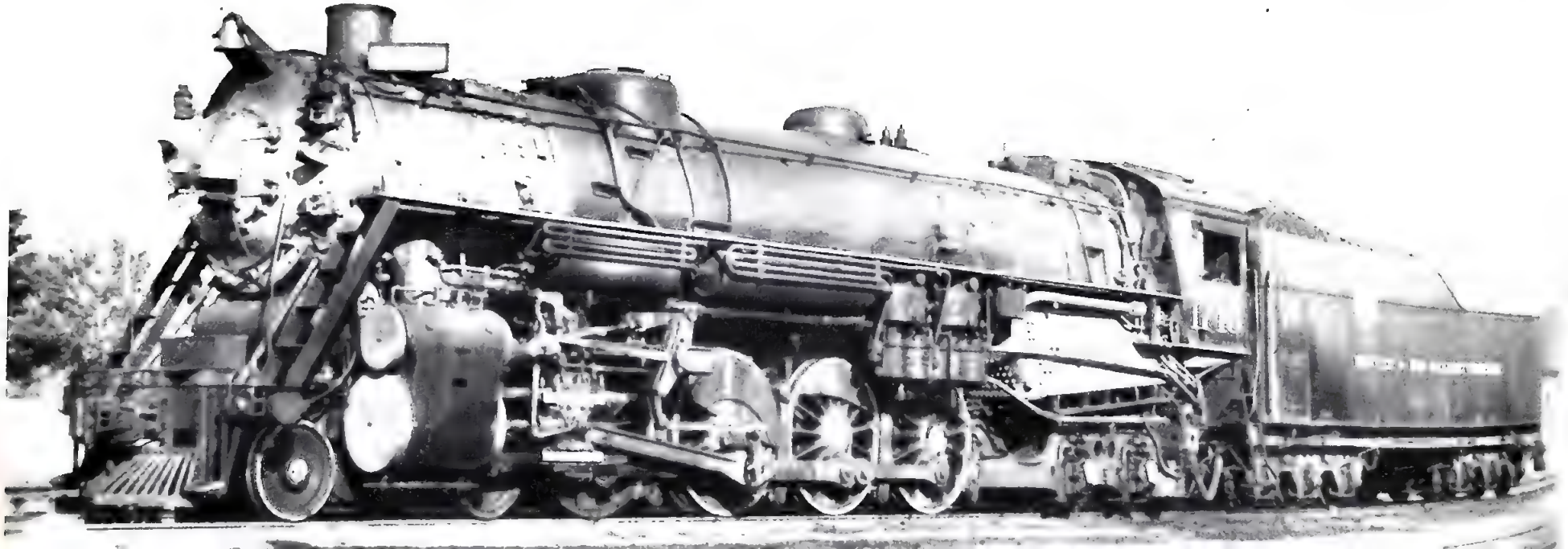


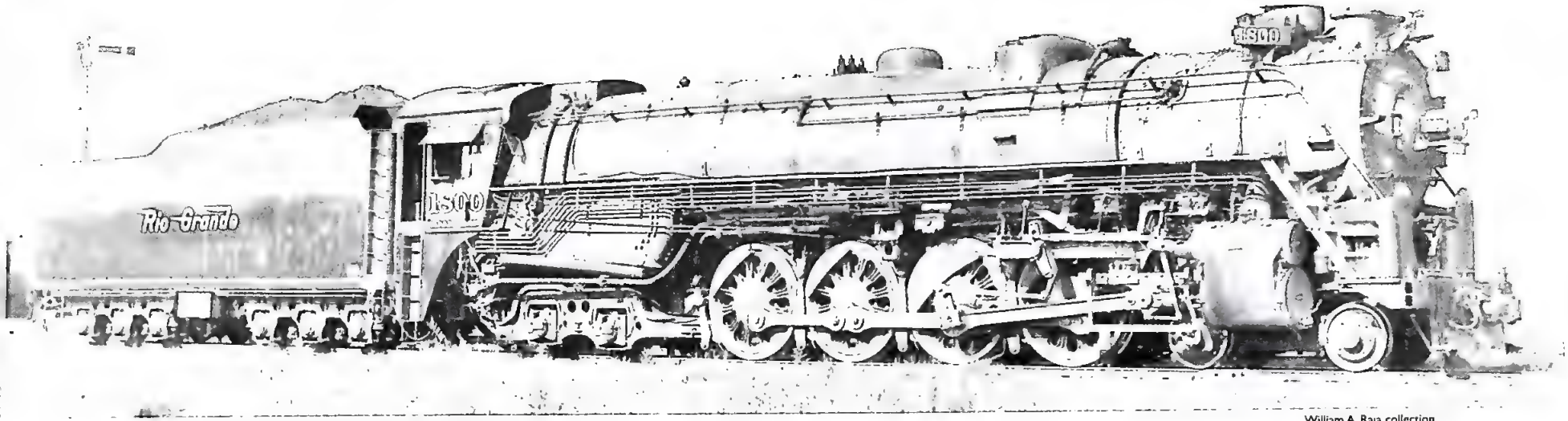
M-64 1700-1713 27x30cyl 60"DR 240BP 63700TF 418150wgt Baldwin, 1929

Robert Graham/William A. Raia collection

Engine 1700 (above), first of the D&RGW 4-8-4s, Denver, October 27, 1939. Engine 1713 (below), Grand Junction, September 6, 1939.

Roy Blackburn/F. Wesley Krambeck collection



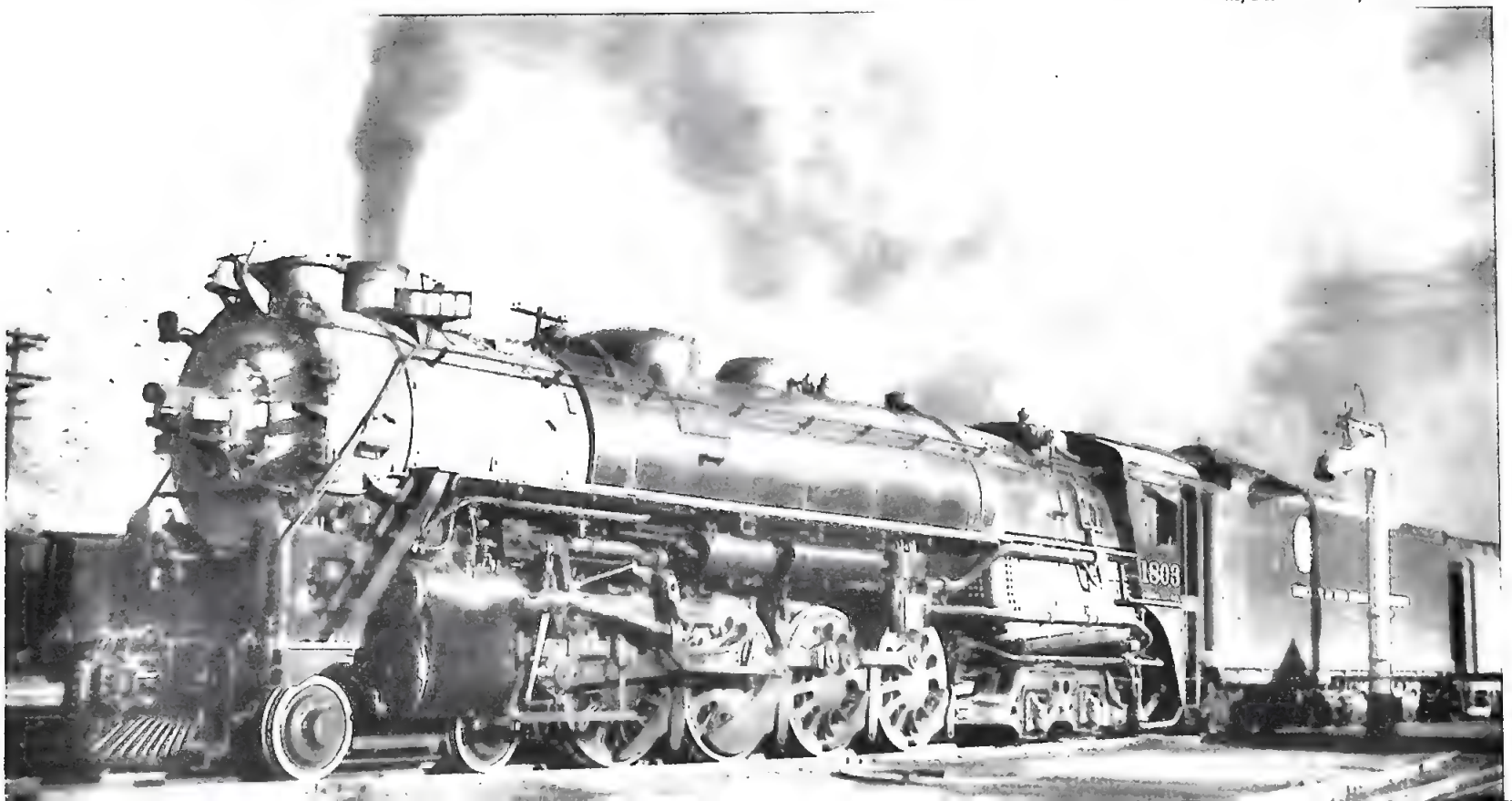


M-68 1800-1804 26x30cyl 73"DR 285BP 67200TF 470000wgt Baldwin, 1937

William A. Raia collection

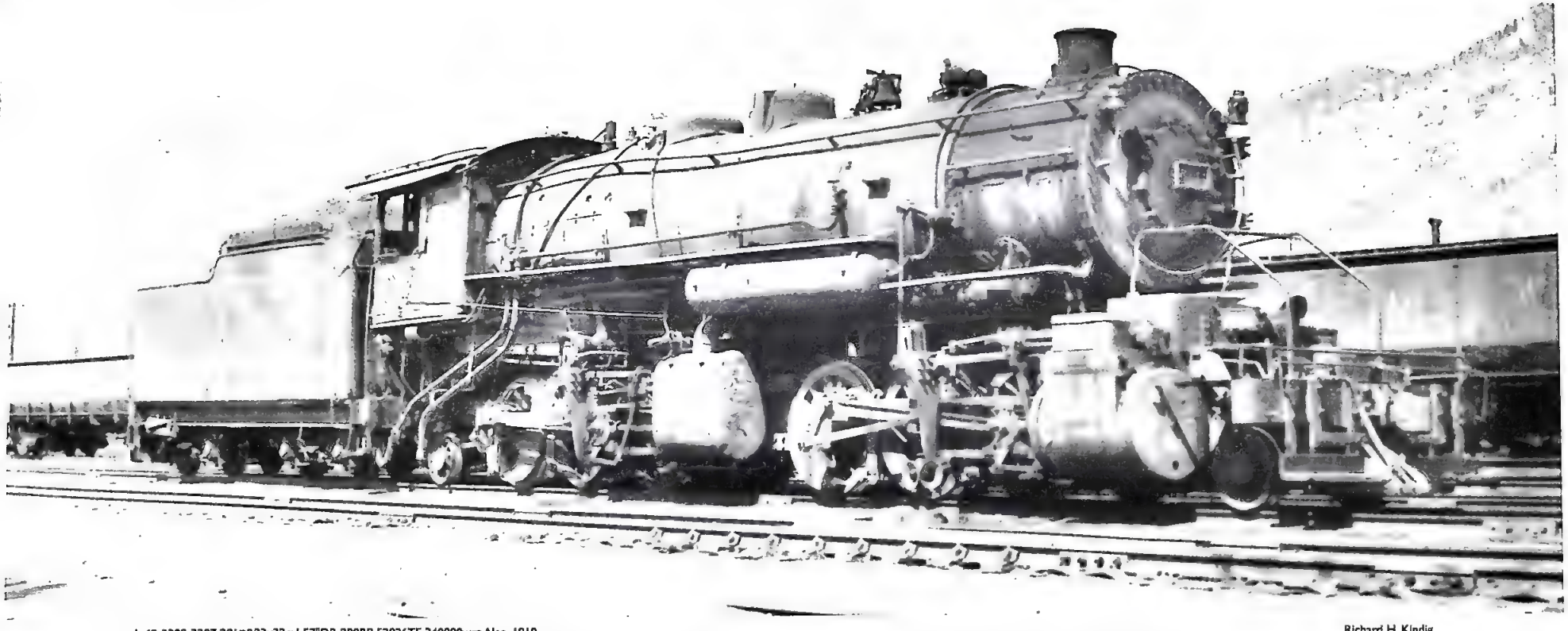
Heavy 4-8-4 1800 (above), Denver, August 11, 1940. Wearing fresh paint, 1803 makes the station stop at Salida on November 10, 1938.

Roy Blackburn/F. Wesley Krambeck collection



Heavy Northern type 1804 is on Train 2, The Scenic Limited, *at Salida, Colo., May 21, 1950.*

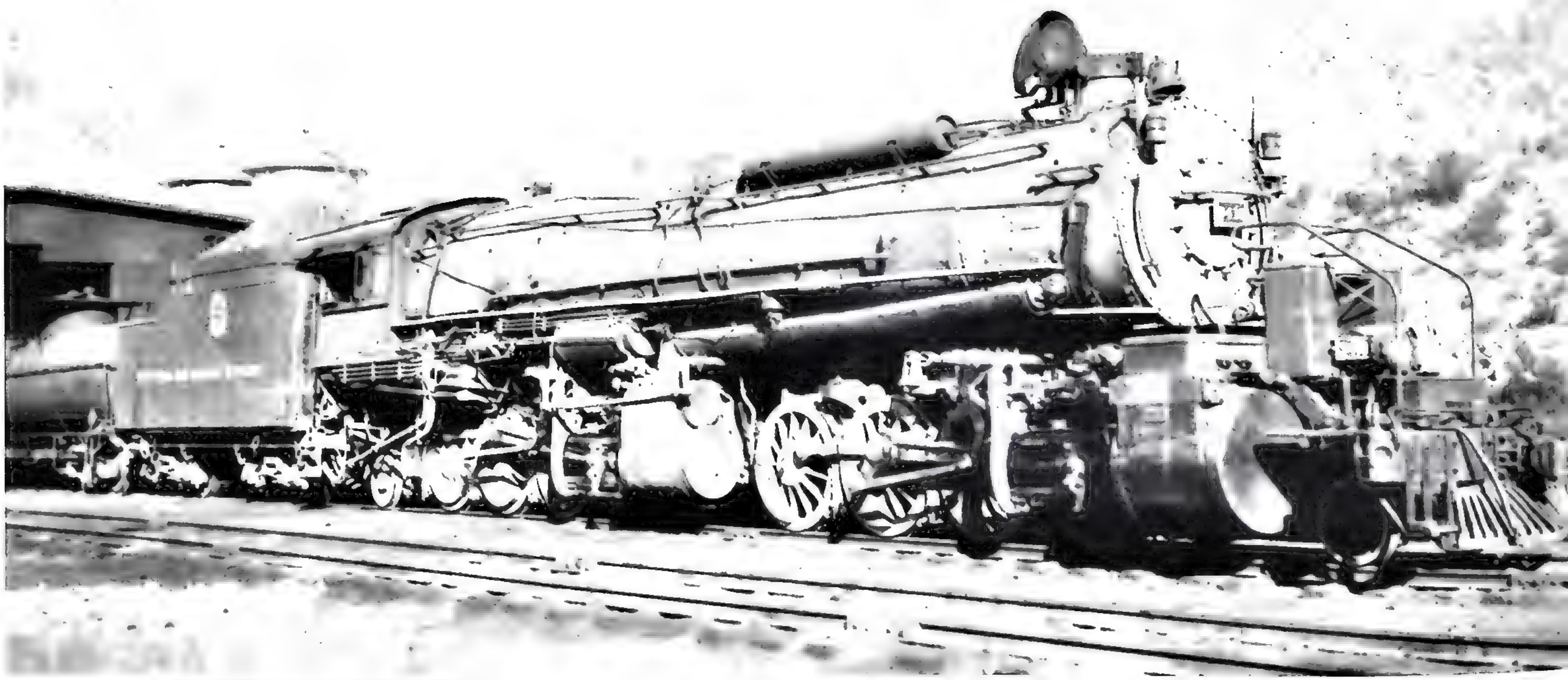
Robert F. Collins



L-62 3300-3307 2011/2&33x32cyl 57"DR 200BP 52026TF 340000wgt Alco, 1910

Richard H. Kindig

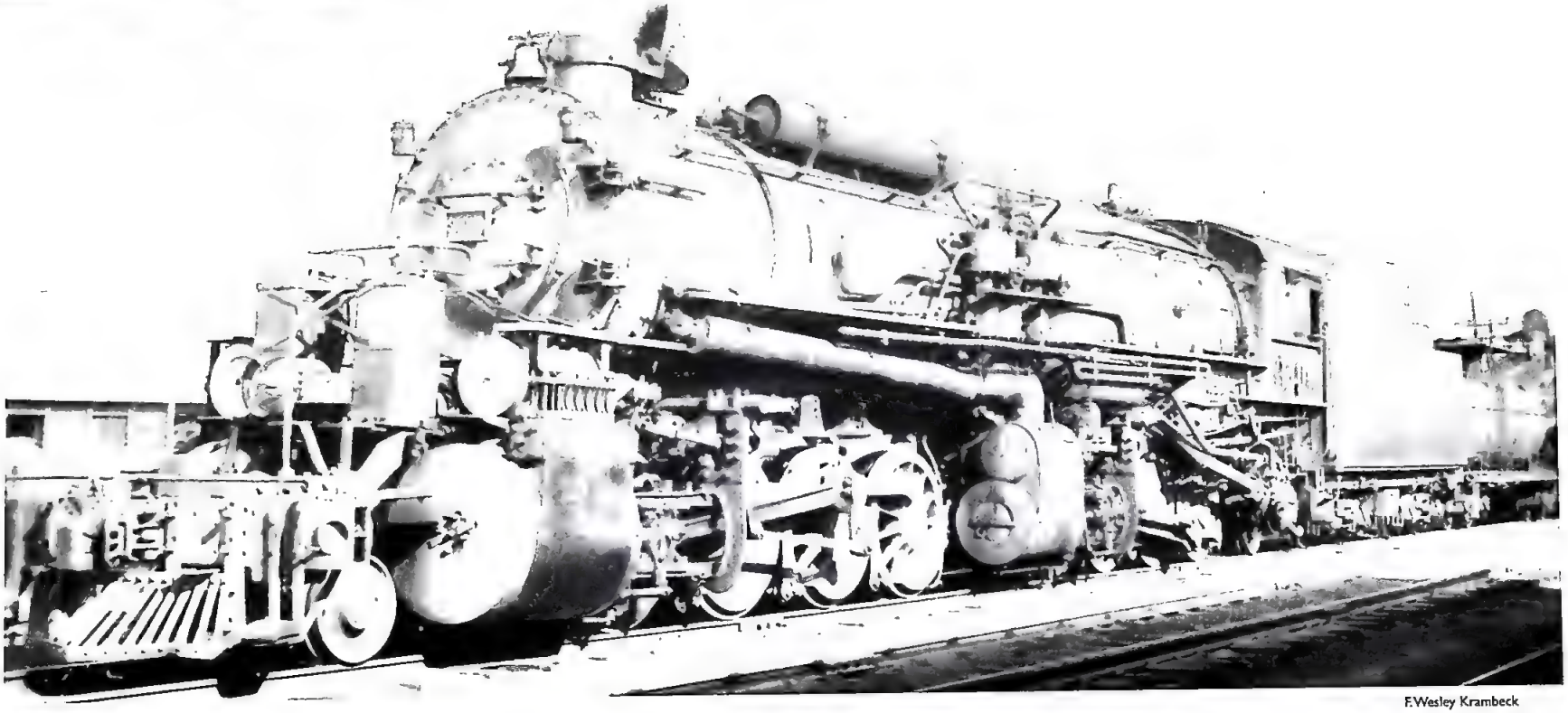
Mallet Compound 2-6-6-2 3303, one of the D&RGW's first articulated engines, is in mine run and switching service at Helper, Utah, June 28, 1939.



L-96 3400-3415 26&40x32cyl 57"DR 200BP 95000TF 458000wgt Alco, 1913

Roy Blackburn/F.Wesley Krambeck collection

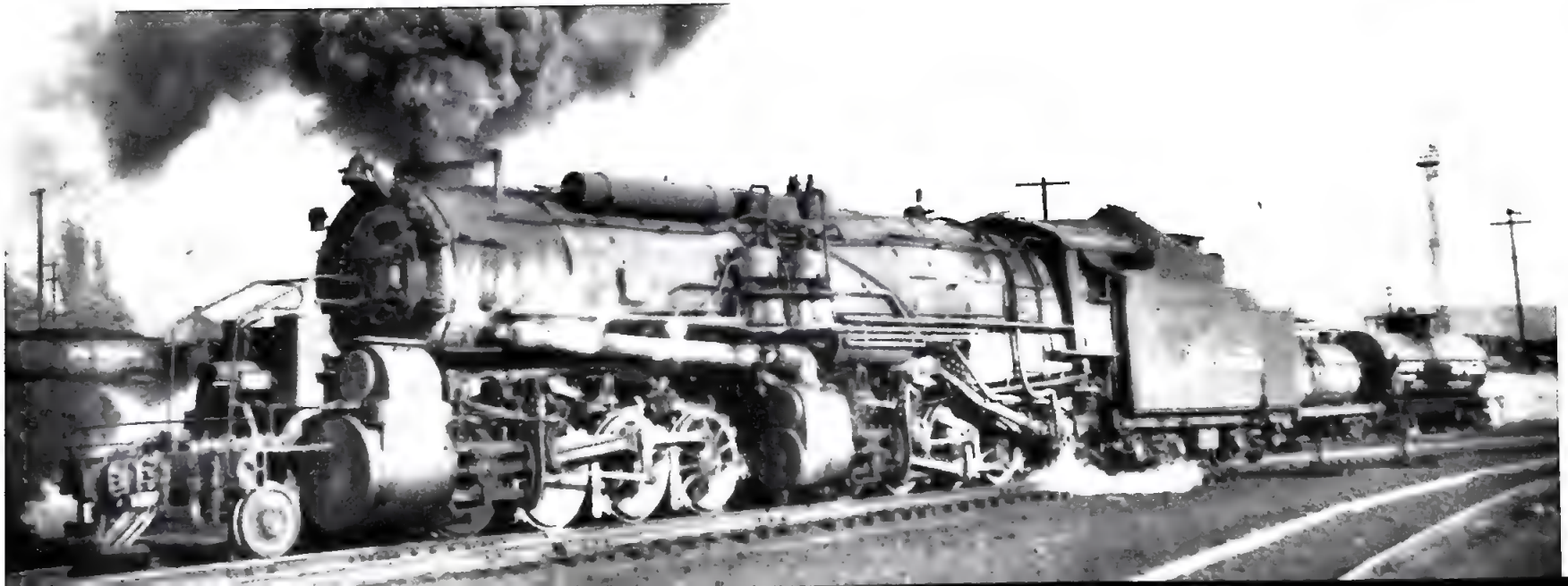
At Bond, Colo., October 26, 1937, Mallet 2-8-8-2 3410 still wears slide valves on the forward cylinders, soon to be replaced by piston valves.



F.Wesley Krambeck

Engine 3409 (above), at Denver on August 11, 1939, is serving on the ex-D&SL main line via Moffat Tunnel. Below, Engine 3404 is in pusher service at Helper, Utah, June 11, 1947.

F.Wesley Krambeck

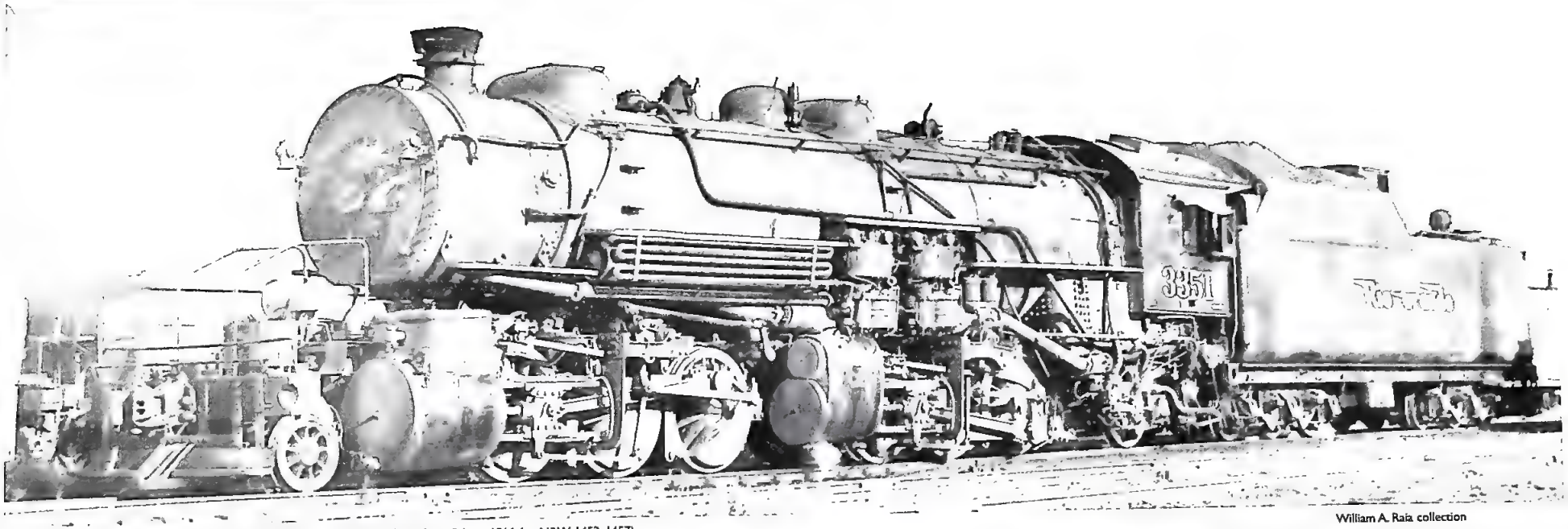


Robert F. Collins

L-109 3500-3509 25&39x32cyl 57"DR 240BP 107374TF 534000wgt Alco, 1923

Mallet 3502 (above), one of the USRA-copy class, is at Alamosa on August 15, 1939, assigned to service over La Veta Pass. The 3507 (below) is ready to doublehead with a 4-6-6-4 westbound from Helper on June 28, 1939.

Richard H. Kindig



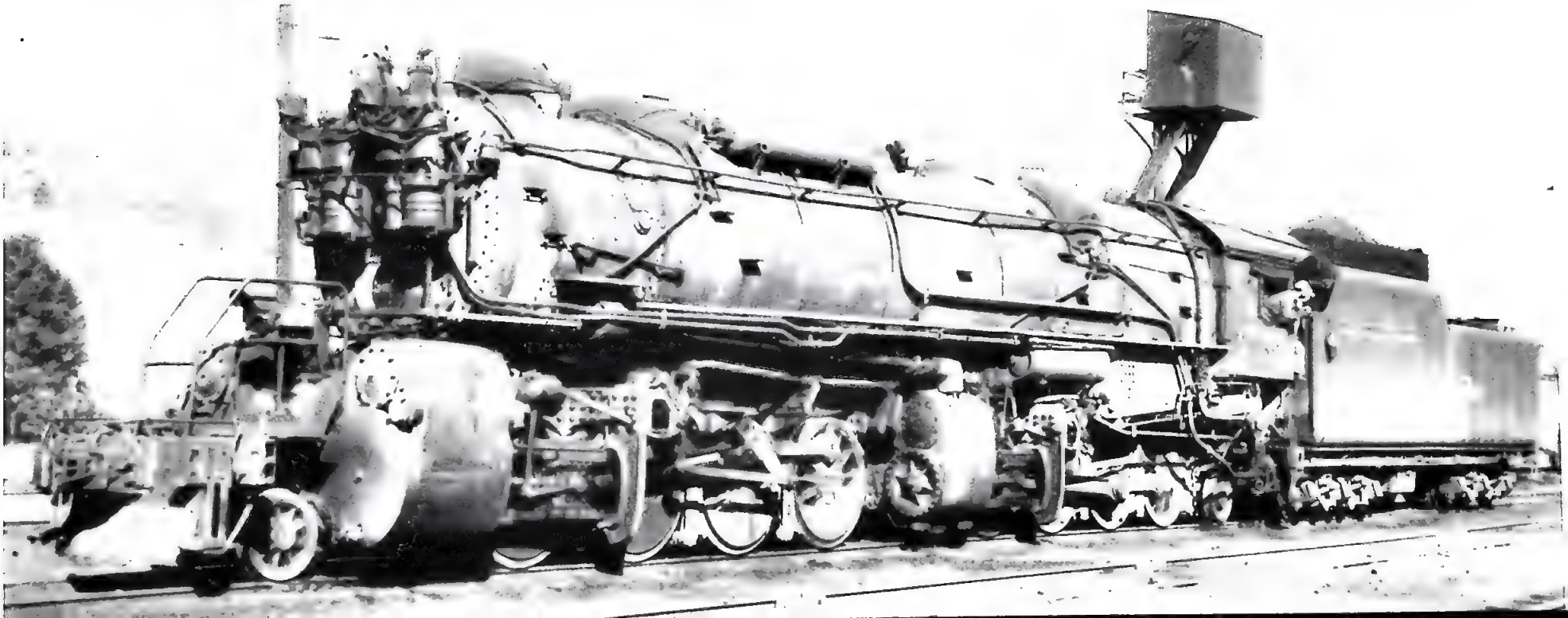
William A. Raia collection

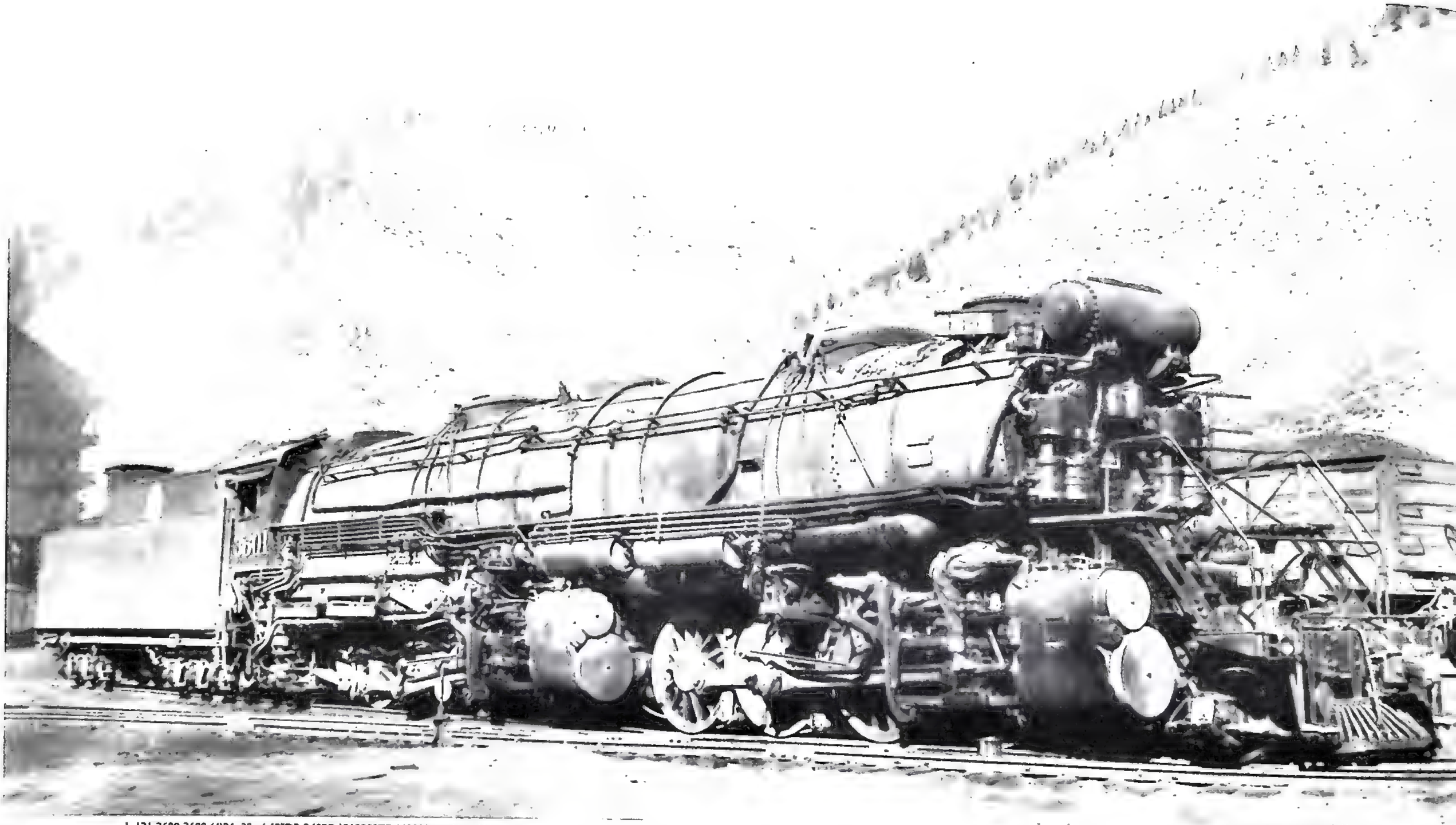
L-76 3350-3351 22&35x32cyl 57"DR 225BP 75830TF 427000wgt Schen., 1916 (ex N&W 1453, 1457)

Norfolk & Western Mallets purchased during World War II were a great help in a time of huge traffic volumes. Engine 3351 (above, Salt Lake City, September 1, 1947) and a sister 2-6-6-2 handled mine run and helper service. The 3565 (below, Minturn, Colo., September 6, 1946) is a close cousin to the D&RGW's built-new 3500s.

Roy Blackburn/F. Wesley Krambeck collection

L-109 3550-3564 25&39x32cyl 56"DR 240BP 109292TF 526000wgt Baldwin, 1919, Roanoke, 1924 (ex N&W 1700 series)





L-131 3600-3609 (4)26x32cyl 63"DR 240BP 1319800TF 649000wgt Alco, 1927

Roy Blackburn/F. Wesley Krambeck collection

Simple Articulated 2-8-8-2 3601, at Minturn, Colo. on October 13, 1939, in Tennessee Pass service, and classmates were the world's largest engines when delivered in 1927.

Richard H. Kindig

Simple Articulated 3607 (above) nears Pando, Colo. with Train 36, ascending Tennessee Pass at 15mph with 51 cars, assisted by 3614 (below) at 4:56pm on June 27, 1940.

Richard H. Kindig

L-132 3610-3619 (4)26x32cyl 63"DR 240BP 131800TF 665000wgt Alco, 1930

Extra East 3608 ascends Tennessee Pass on May 22, 1950, assisted by mid-train helper 3614 and pusher 3619. See also next page.

Ribert F. Collins

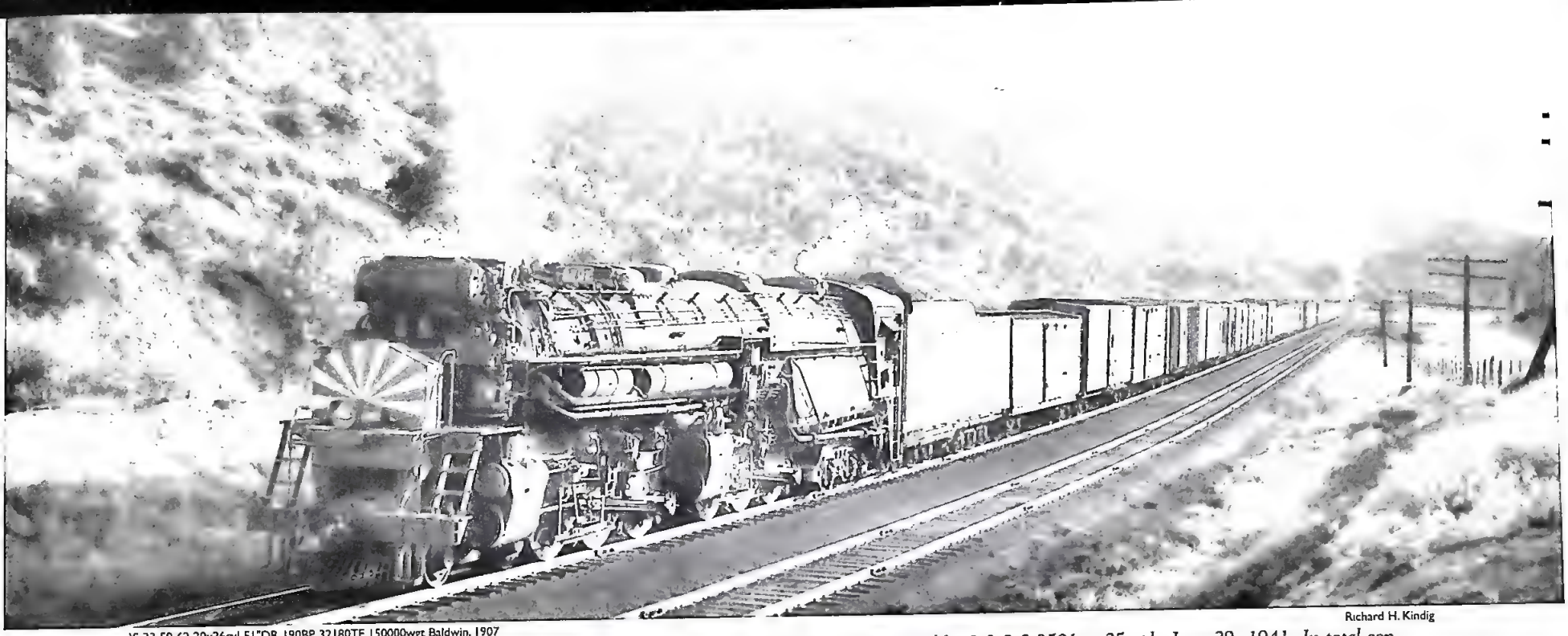
Robert F. Collins

L-105 (4)23x32cyl 70"DR 255BP 105000TF 620000wgt Baldwin, 1938

Robert F. Collins

At Salt Lake City Union Station is 4-6-6-4 3705 (above, August 20, 1939). 4-6-6-4 3709 (below) awaits a westbound run at Grand Junction on May 22, 1950.

Robert F. Collins

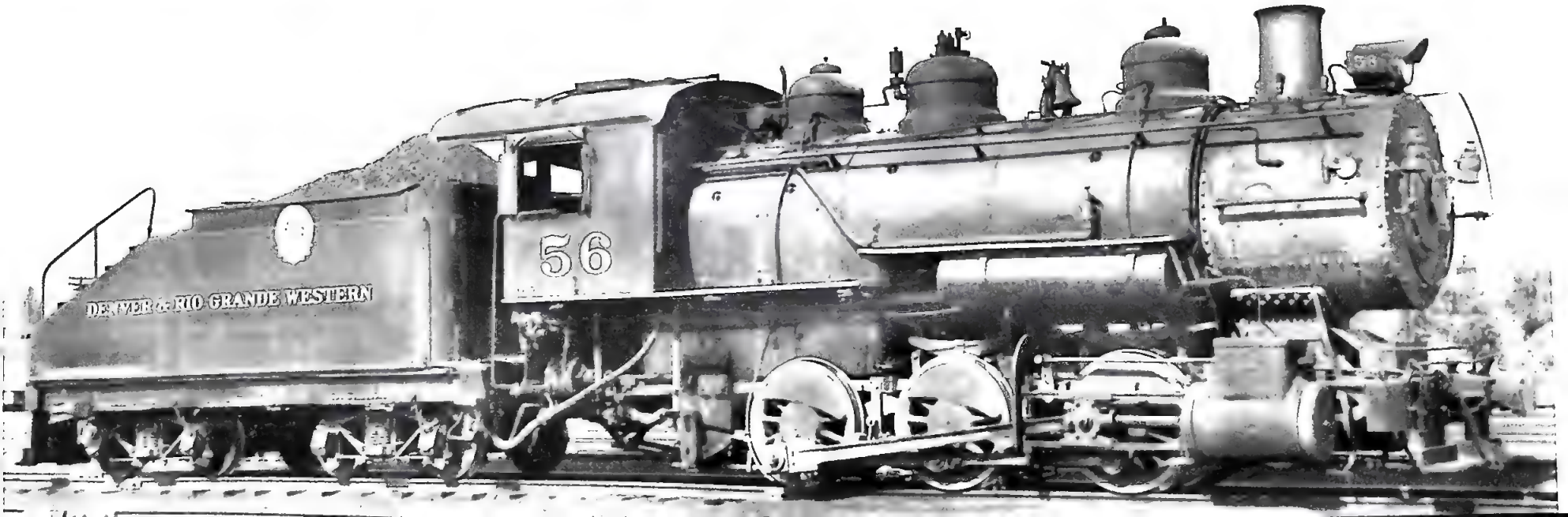


Richard H. Kindig

\S-33 50-62 20x26cyl 51"DR 190BP 32180TF 150000wgt Baldwin, 1907

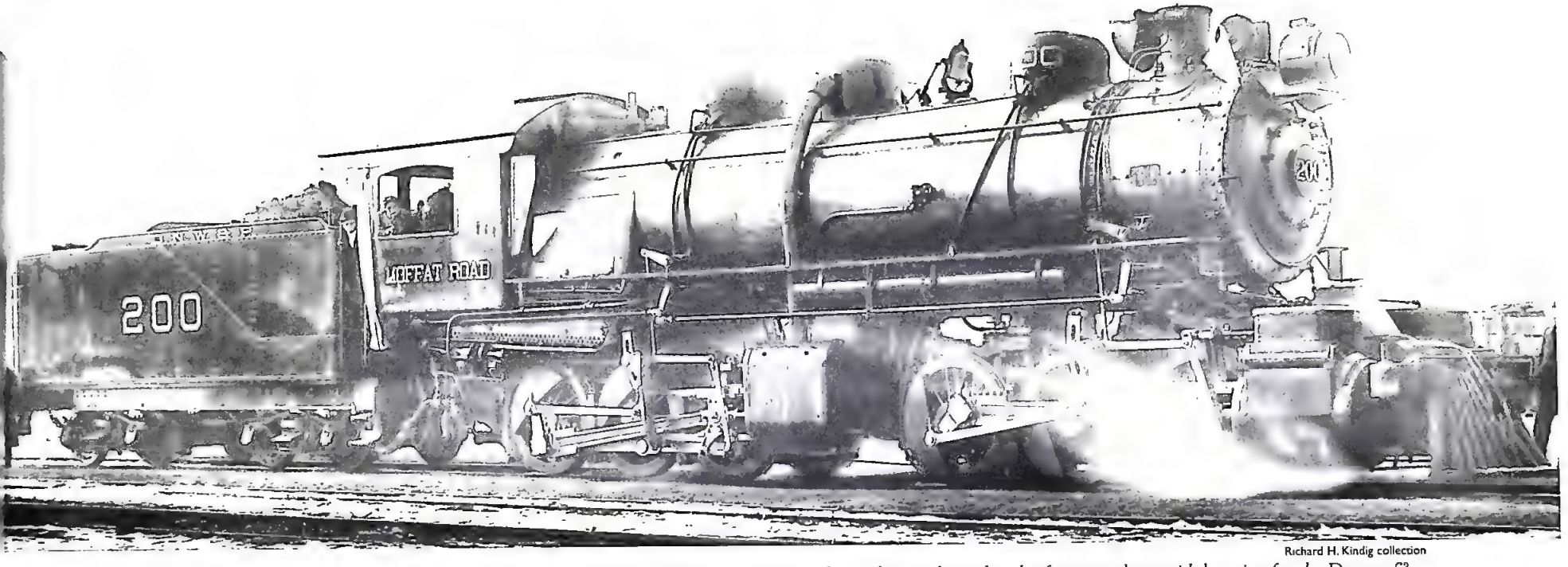
First 30 ascends Soldier Summit Grade near Detour, Utah behind 4-6-6-4 3707 with 65 cars assisted by 2-8-8-2 3501 at 25mph, June 29, 1941. In total contrast, 0-6-0 56 (below) reflects the sole class of pure D&RGW switching power, as seen at Salt Lake City, May 1, 1939.

William A. Raia collection



Richard H. Kindig

At Coal Creek, Colo., D&SL 2-6-6-0 Mallets 216 and 208, each with an auxiliary water tender, take 56 cars up the long 2% grade out of Denver at 20 mph on February 14, 1946 at 3:57 p.m.



Richard H. Kindig collection

A new 200 appears at Denver wearing the Denver, Northwestern & Pacific initials on the tenders, to be replaced a few years later with lettering for the Denver & Salt Lake. A few years later, this engine and all her sisters were converted from 0-6-6-0 to 2-6-6-0 type for better riding stability over the road's sharp curves.

A Denver & Salt Lake Sojourn

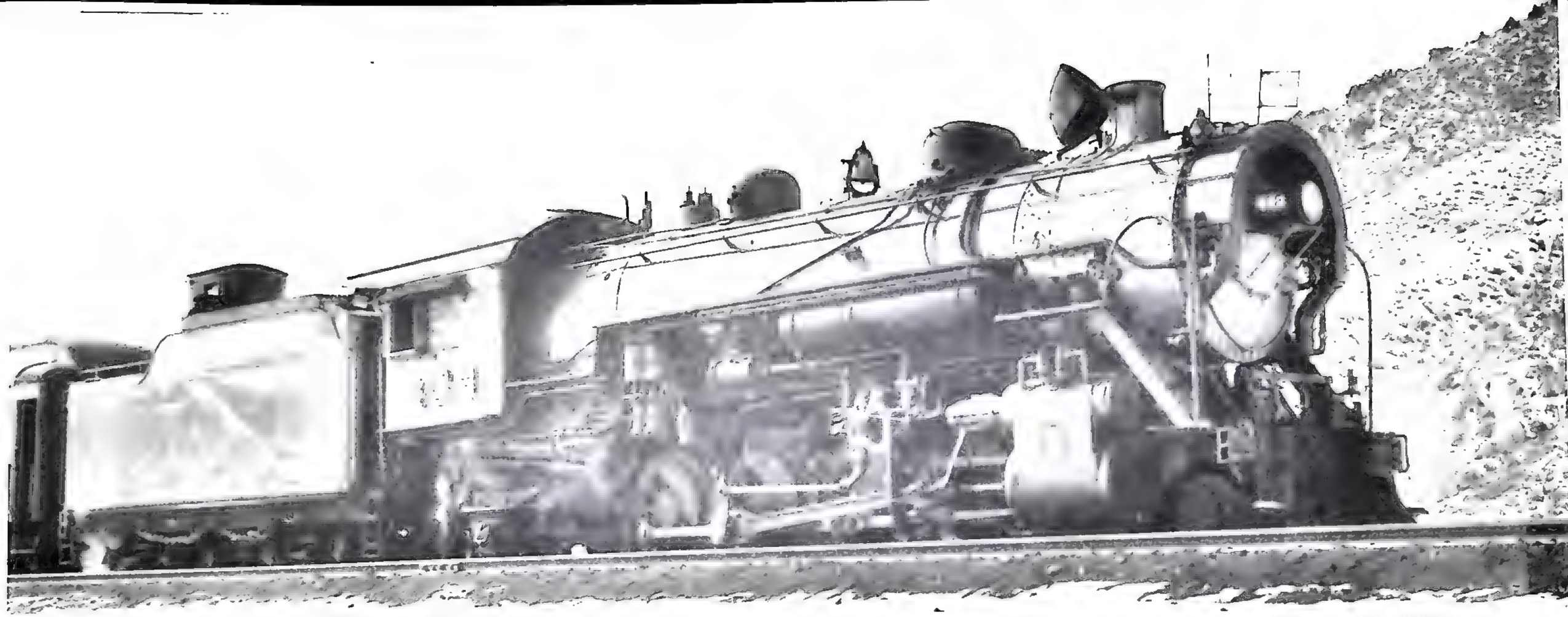
In 1931, the Denver & Rio Grande Western acquired majority stock control of the Denver & Salt Lake. The latter, first called the Denver, Northwestern & Pacific, was meant to become another route from Denver to western connections. Though never realizing this objective, the D&SL did complete a six-mile tunnel—the famed Moffat Tunnel—under the Continental Divide, opening the door to a possible improved through route.

This objective was realized in 1934 when a 35-mile cutoff was completed between Orestod on the D&SL and Dotsero on the D&RGW between Tennessee Pass and Grand Junction. The new routing was more than 170 miles shorter than the D&RGW main line via Pueblo, Colo.

Following the Dotsero Cutoff's completion, the D&RGW routed growing traffic over the D&SL under trackage rights behind its own power. The D&SL still ran independently, handling its own traffic. True merger, with D&SL power added to the D&RGW roster, occurred in 1947.

The 1930s D&SL roster included 17 2-6-6-0 Mallets for the tortuous Rollins Pass trackage that was eliminated upon the Moffat Tunnel's completion. Numbers 200-211 were Alco 0-6-6-0 Mallets delivered in 1908-1913, but later rebuilt to 2-6-6-0s for better tracking. In 1916, 212-216 came with leading trucks. Later years found these Mallets serving the full line.

Alco 2-8-0 types of 1904-1910 were conventional road freight



408, 409 25x30cyl 55"DR 200BP 62700TF 306000wgt Alco, 1916

Richard H. Kindig

At Sulphur Springs, Colo. on a ski train February 2, 1938, Alco-built Mikado 409 differs from her Lima predecessors in style of cab and trailing truck, but is otherwise close to the earlier 400s.

power, soon augmented by new 2-8-2s. Lima supplied 55-inch drivered 1915 Mikados 400-408, followed by Alco-built 408-409 in 1916. They worked largely west of Rollins Pass, but saw universal service after the Moffat Tunnel opened.

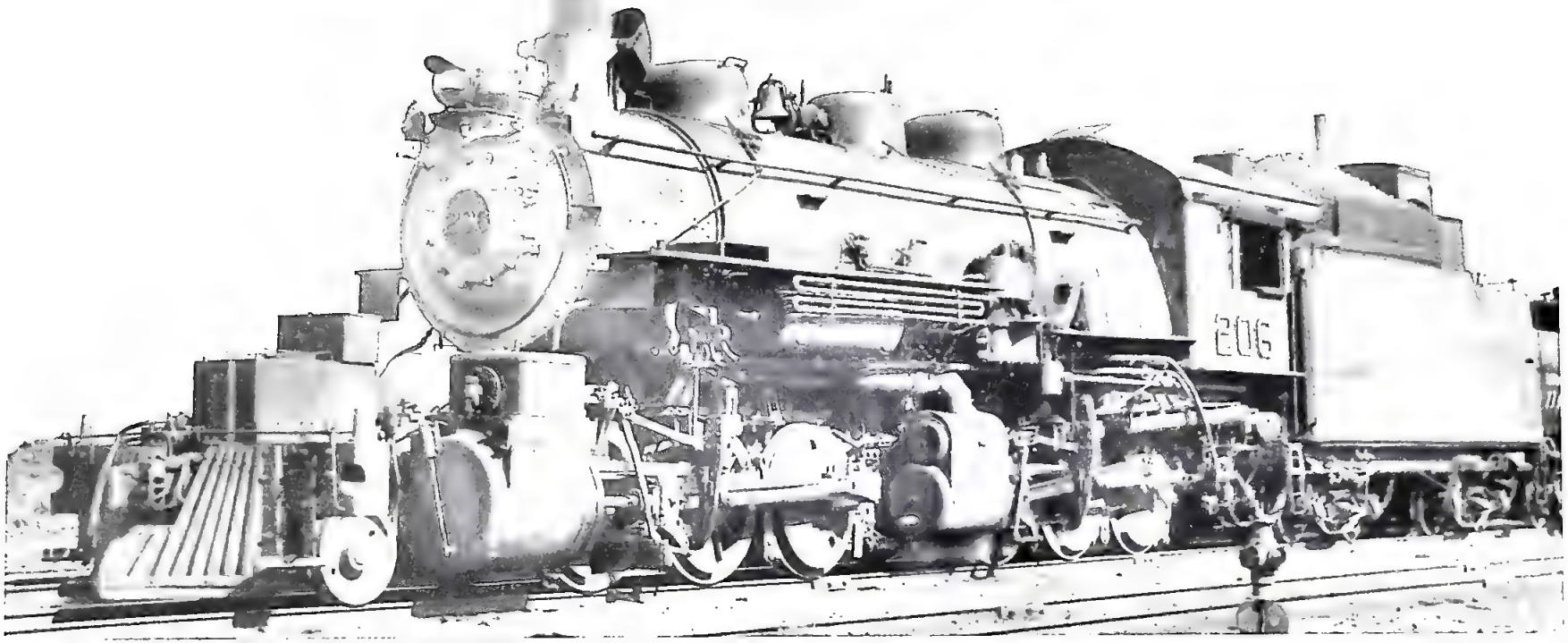
Ten Wheelers 300-303 were ample for D&SL passenger service. The 300 and 303 had 63-inch drivers, with 67-inch size on 301-302. All had slide valves and Stephenson motion. The 303 was later modernized with a superheater, universal valves in place of slide valves, and Walschaert valve gear.

Alco 1903 0-6-0s 20 and 21 were the sole pure switching power. Like the D&RGW, the D&SL used lighter road power for most switching.

Between the 1934 Dotsero Cutoff opening and the 1947 merger, D&RGW traffic grew heavily. The era saw steady right of way improvements to accommodate larger power. Where at first the D&RGW employed its lighter power here, trackage improvement made it possible to employ such engines as the giant 3600 series simple articulateds.

The continuous two percent westbound grade between Denver and the Moffat tunnel, nonetheless, necessarily limited speed. The huge mileage saving compared to prior routing still presented a massive gain in through traffic scheduling. By the mid-1940s, a high proportion of traffic formerly routed via the Royal Gorge route was moving over the D&SL route.

Though there were two 0-6-0 switchers on the D&SL, they turned increasingly to the smaller road power for yard work.

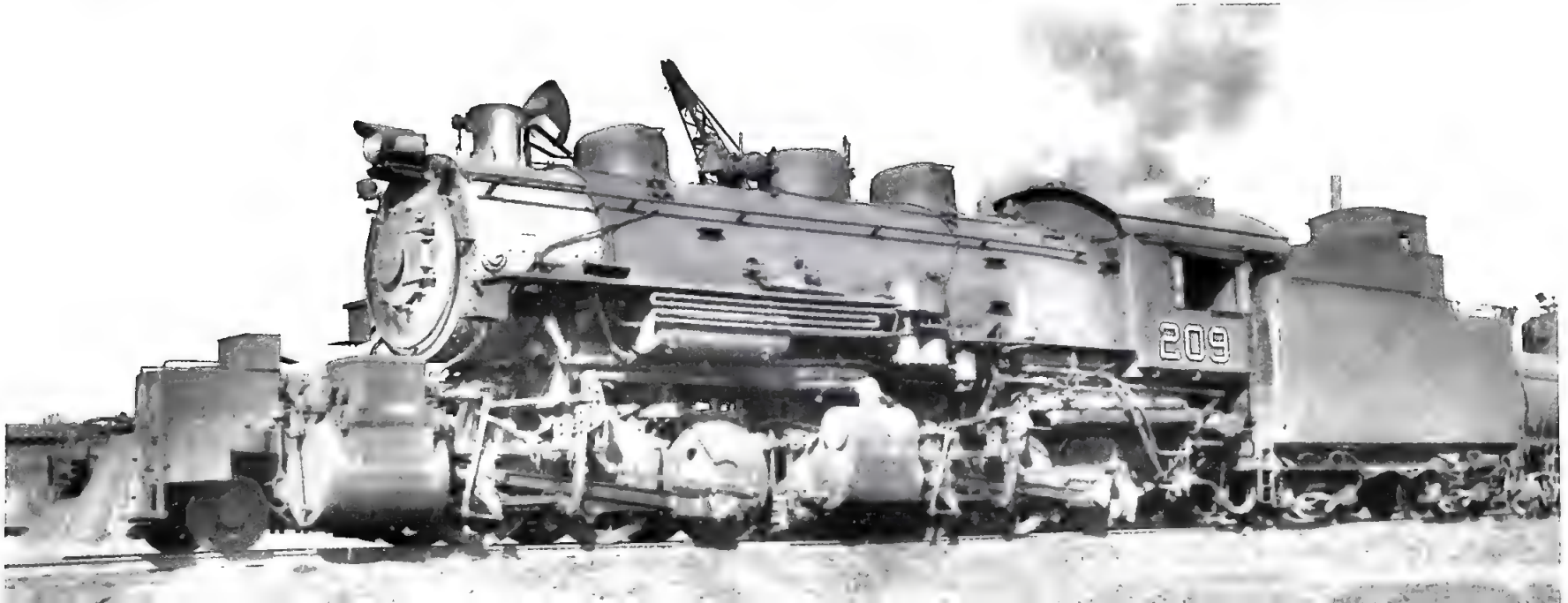


200-211 21&331/2x32cyl 55"DR 225BP 76400TF 362000wgt Alco, 1908-1913

William A. Raia collection

Engine 206 (above) is one of the series converted from 0-6-6-0 to 2-6-6-2 for improved tracking. Like the 209 (below, Denver, August 30, 1940), disc main drivers have been installed for improved riding qualities. Though delivered in separate lots, few differences save for some piping are evident between these engines.

William A. Raia collection

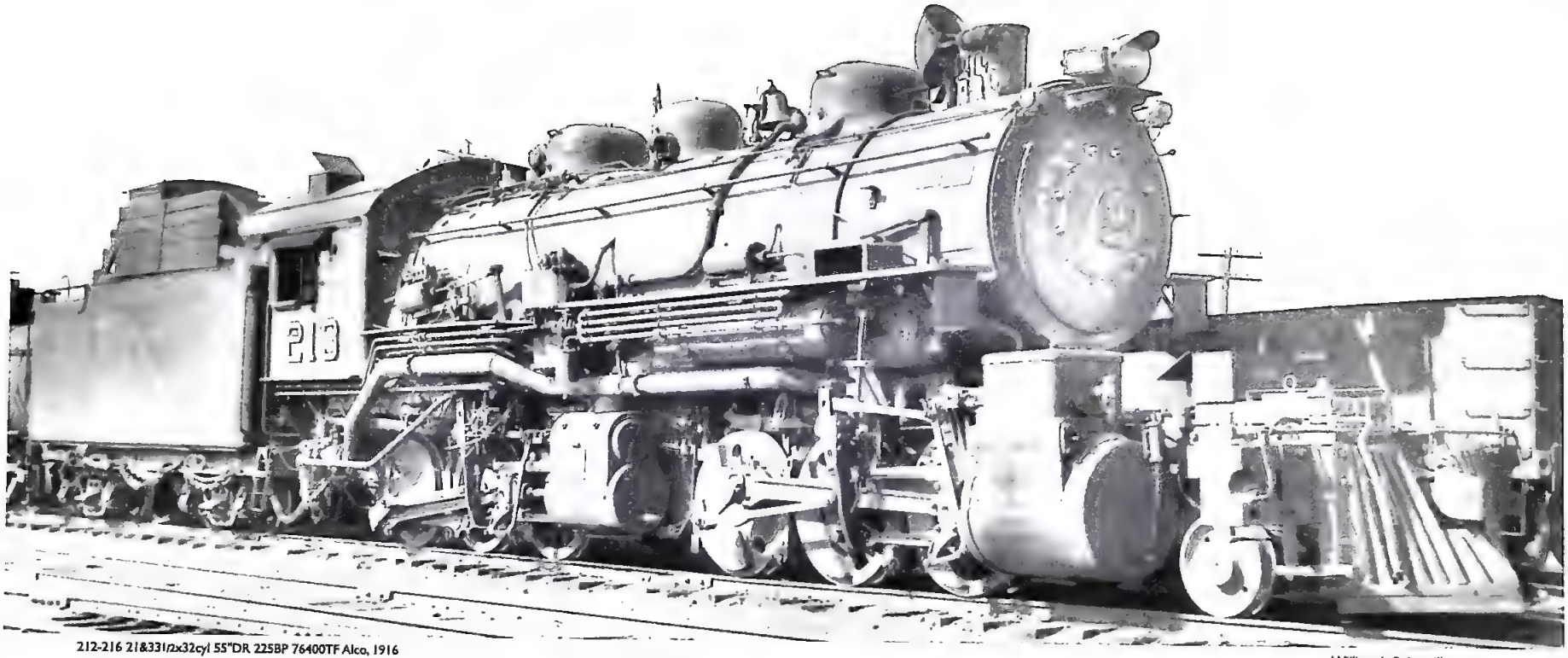


212-216 21&331/2x32cyl 55"DR 225BP 76400TF Alco, 1916

William A. Raia collection

Engine 213 (above, Denver, August 30, 1941) was one of the final series and was delivered with a two-wheel leading truck. D&RGW 3369 (below), the former D&SL 409, is at Denver, May 30, 1950.

J. O. Riley/William A. Raia collection

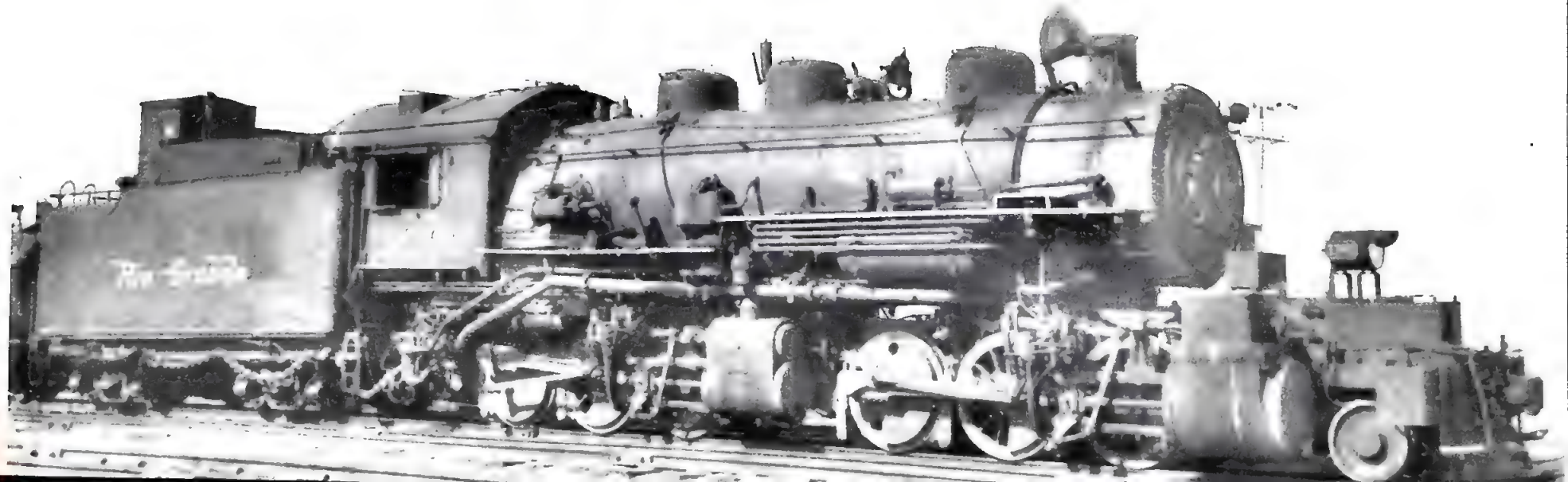


212-216 21&33½x32cyl 55"DR 225BP 76400TF Alco, 1916

William A. Raia collection

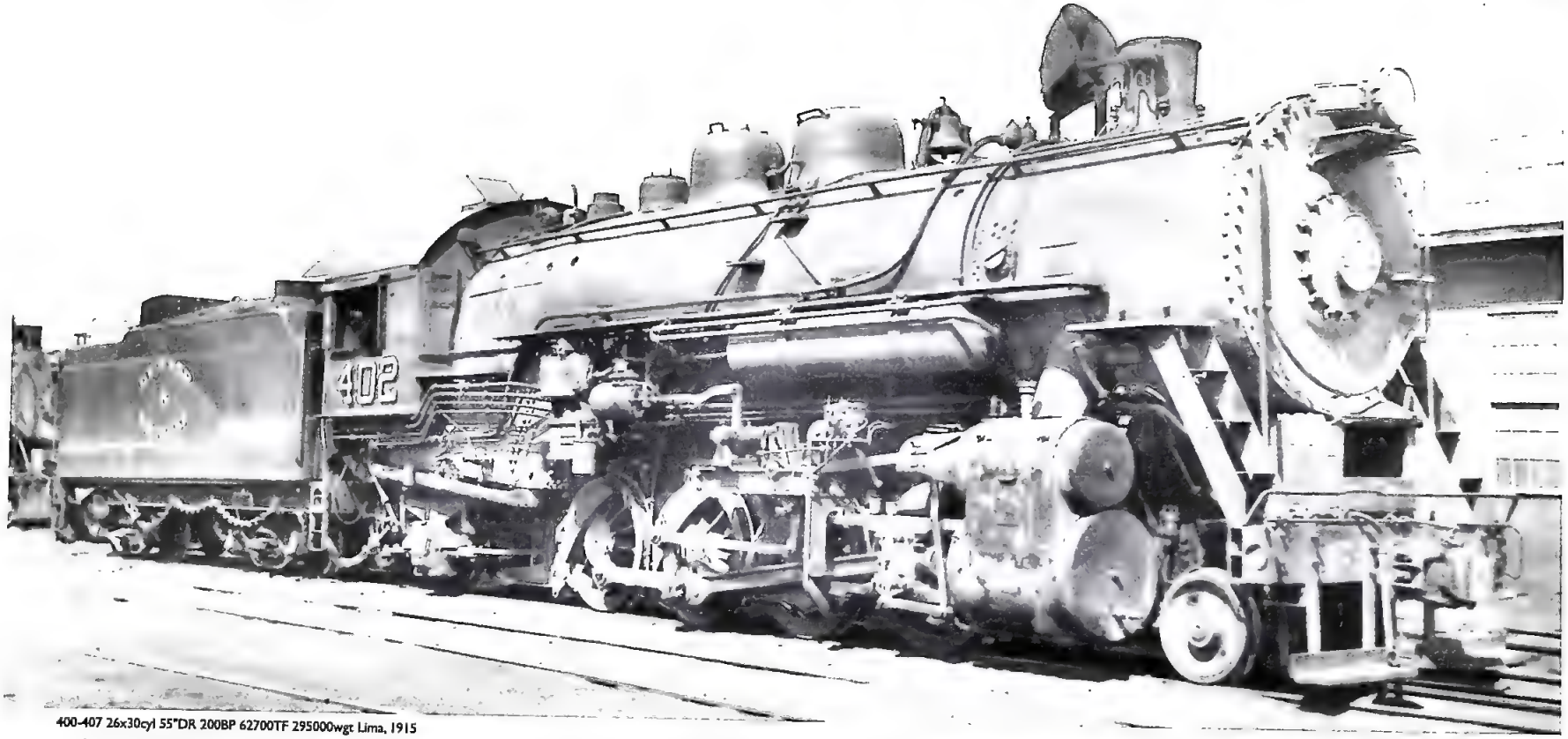
Engine 213 (above, Denver, August 30, 1941) was one of the final series and was delivered with a two-wheel leading truck. D&RGW 3369 (below), the former D&SL 409, is at Denver, May 30, 1950.

J. O. Riley/William A. Raia collection



Richard H. Kindig

Consolidation 118 and Mallet 207 roll an extra west at Ralston, Colo., doing 25mph with 26 cars at 3:25 p.m., February 9, 1947.

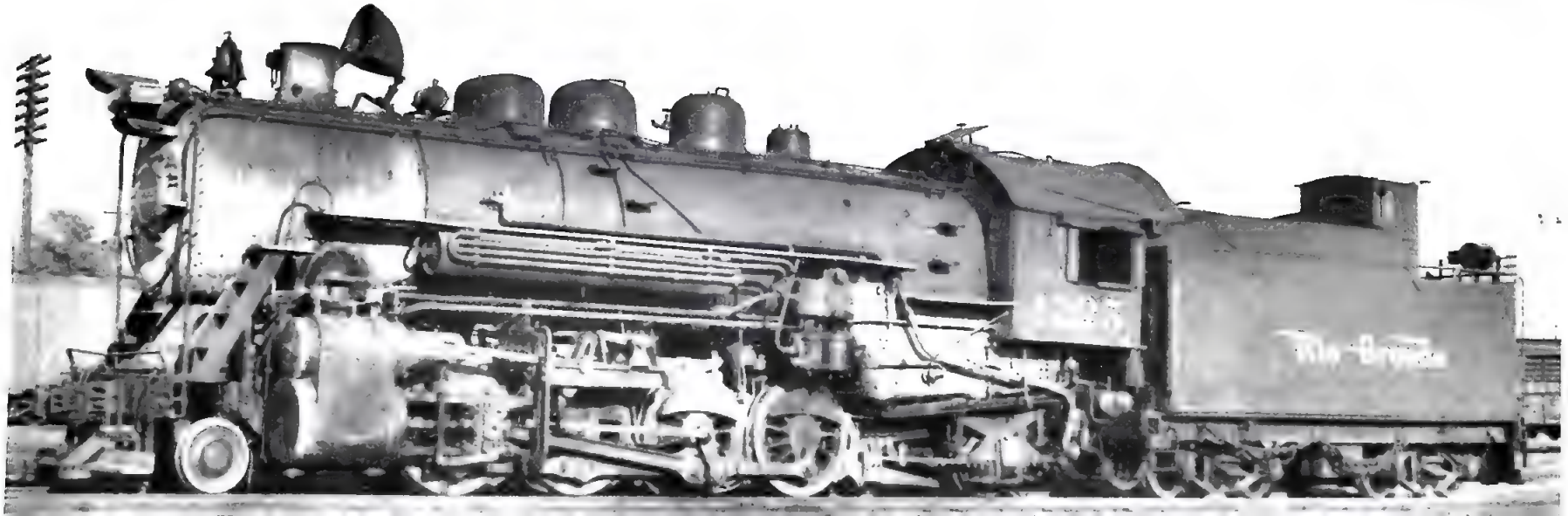


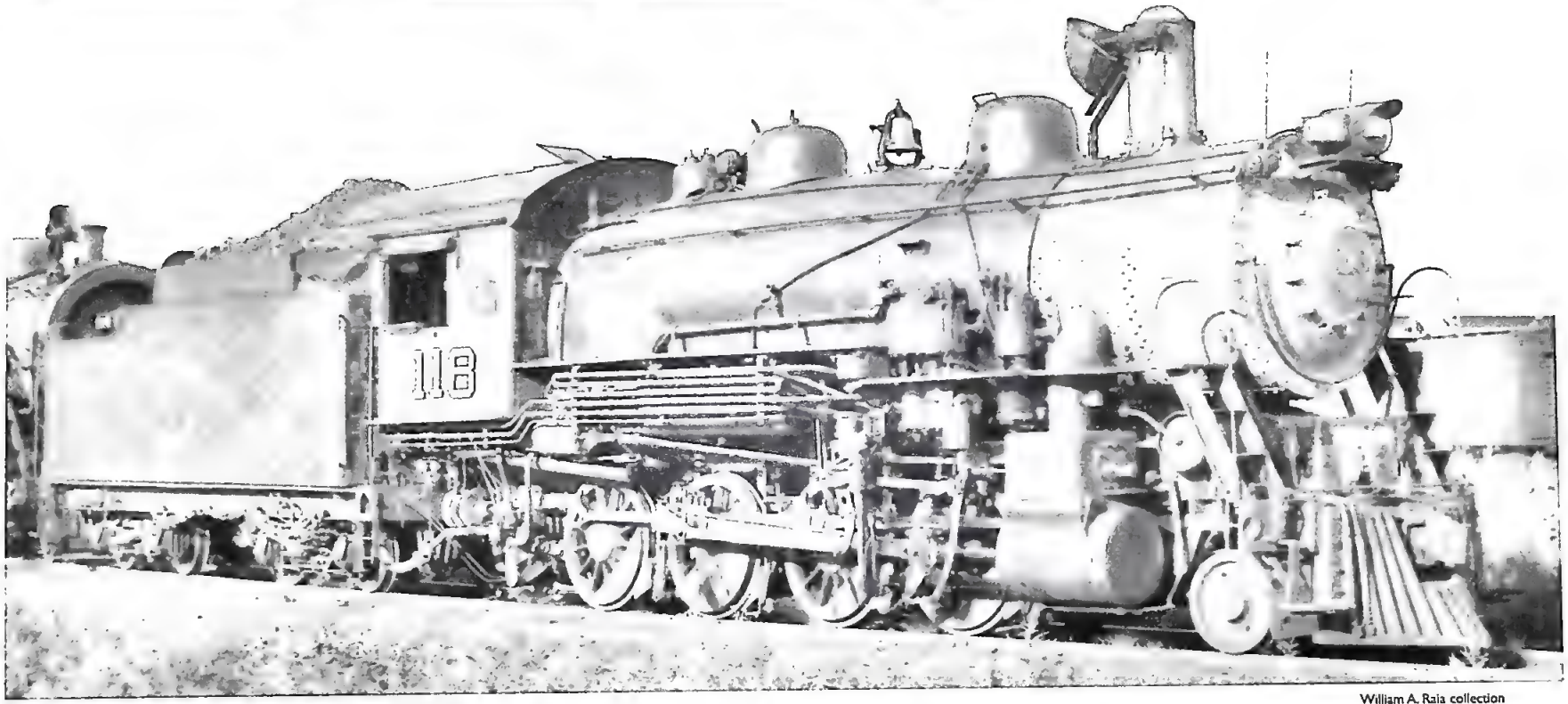
400-407 26x30cyl 55"DR 200BP 62700TF 295000wgt Lima, 1915

William A. Raia collection

Mikado 402 (above) wears D&SL's standard decor at Denver, September 28, 1947. D&RGW 1225 (below), ex D&SL 405, wears post-1947 merger garb at Denver ca. 1950

William A. Raia collection





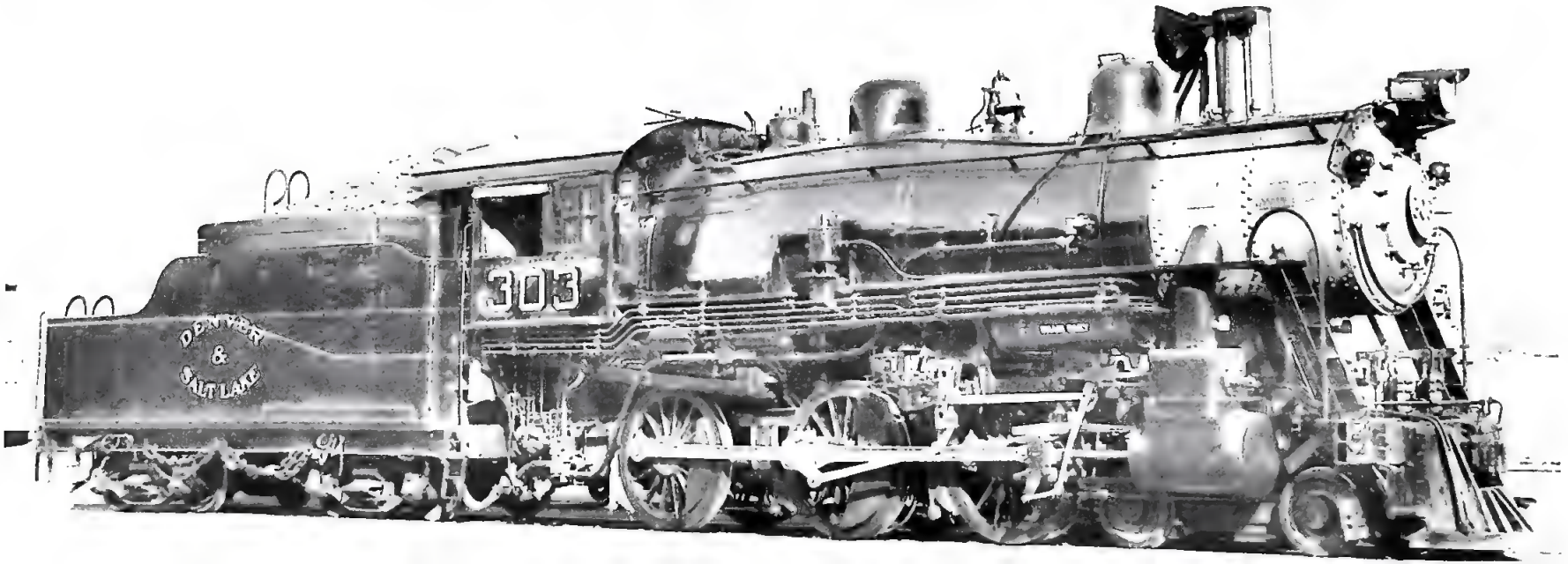
William A. Raia collection

103-123 22x28cyl 55"DR 210BP 43980TF 219000wgt Alco, 1906-1910

Denver & Salt Lake 2-8-0 118 (above) is at the Denver engine terminal on August 28, 1938. Also at Denver is Ten Wheeler 303 (below) on August 5, 1939.

William A. Raia collection

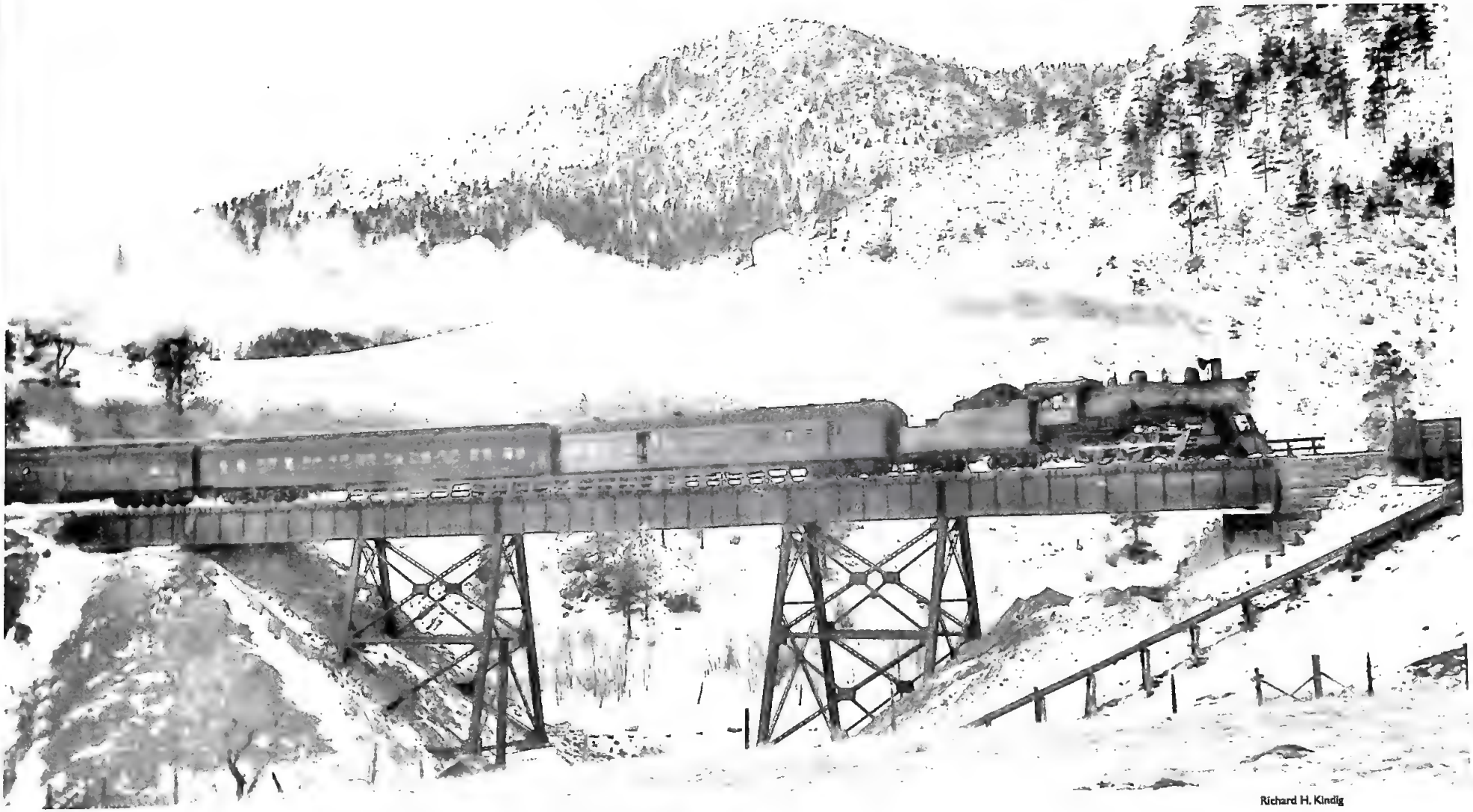
303 20x28cyl 63"DR 205BP 34150TF 215100wgt Alco, 1910



Richard H. Kindig

Mallet 208 and an eastbound extra emerge from Tunnel 26 (above) in South Boulder Canyon east of Pinecliff, Colo. in August, 1935. In the same month, eastbound Extra 203 (below) approaches Tunnel 25 below Pinecliff.

Richard H. Kindig

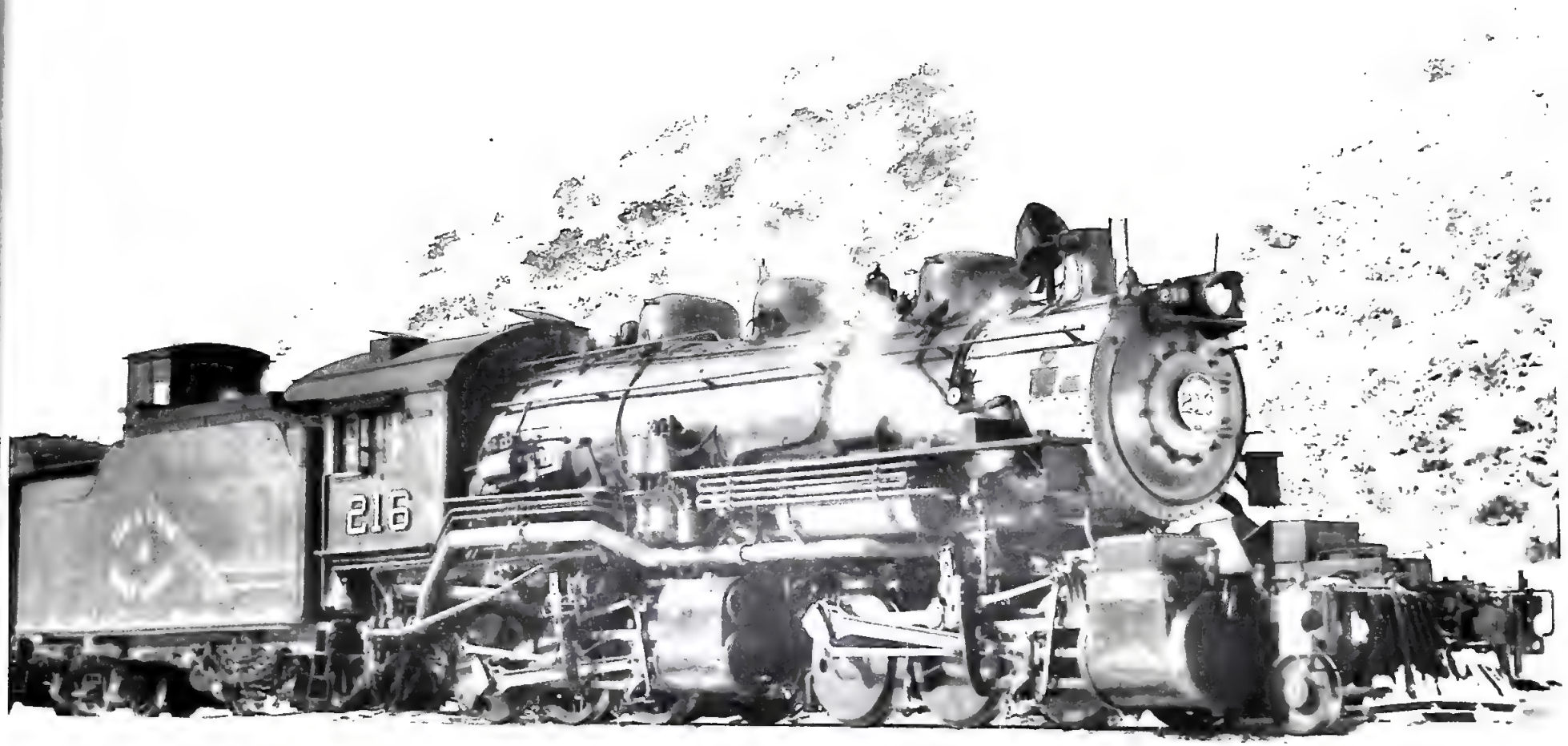


Richard H. Kindig

Ten Wheeler 303, Train 1, Coal Creek, Colo., 9:55 a.m., December 18, 1938.

Richard H. Kindig

D&RGW Mallet 3375, ex D&SL 216 handles an eastbound extra downgrade near Plainview, doing 25mph with 16 cars at 2:35 p.m., February 10, 1949.

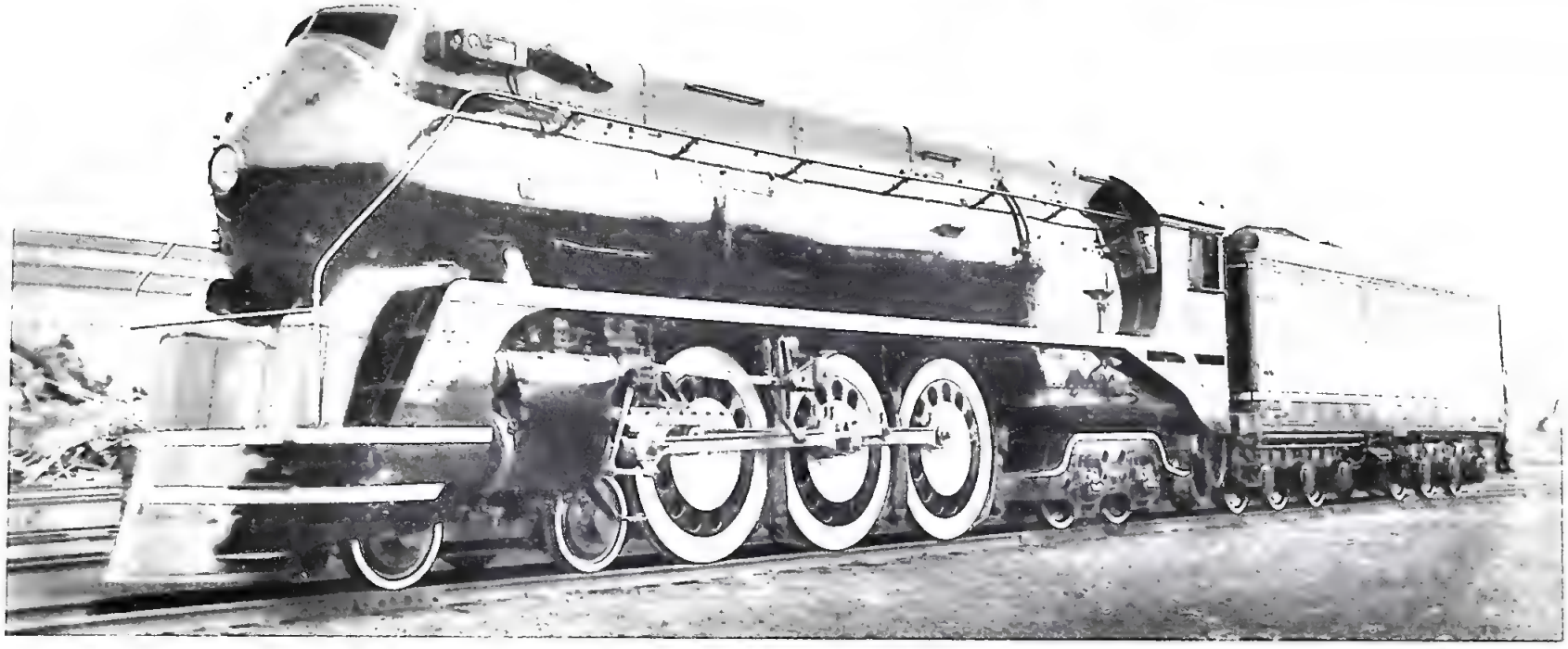


Richard H. Kindig

Rare indeed were Mallets in passenger service, but D&SL 216 was heading a ski excursion at Sulphur Springs, Colo., February 6, 1938.

Robert F. Collins

New Haven-bound Hudson 1401 wears green flags while hastening the 13 cars of Advance 171. The Patriot, *through Sharon, Conn. On April 18, 1943.*



Raymond W. Brown collection

An immaculate 1406 awaits delivery at the Baldwin Locomotive Works Eddystone plant in April, 1937.

THE NEW HAVEN'S STREAMLINED HUDSONS

Though the New York, New Haven & Hartford Railroad was electrified from New York to New Haven, Conn., the 156 mile segment from there to Boston was steam operated. Its heavy passenger service was largely in the hands of 50 79-inch drivered Pacifics, I-4 class Engines 1350-1399. Rated at 37,650 pounds tractive force in final form, they were still handling the road's fastest and heaviest trains 20 years after Alco supplied them in 1916.

Over the years, there was much discussion of electrification through to Boston, inhibiting new steam passenger power planning. The 1930s national depression and the New Haven's 1937 bankruptcy, however, left no doubt that a costly electrification was not imminent.

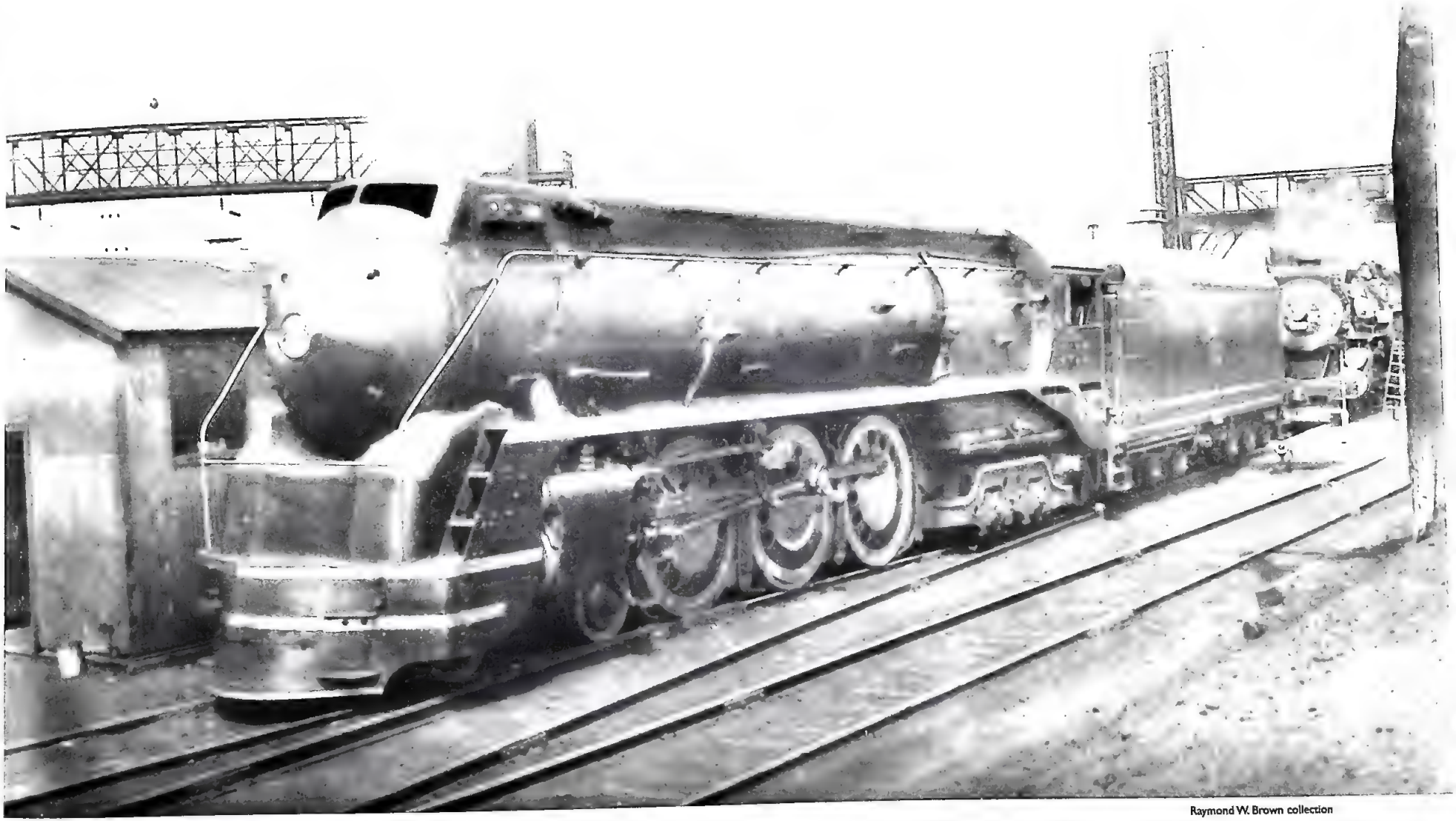
With 20-year old Pacifics of modest power handling heavy trains, strain on these engines was considerable. Second sections of many runs were commonplace. In 1936, therefore, plans were developed for 10 new 4-6-4 types with ample high-speed power to run long trains on tight schedules. Baldwin received the contract and their Eddystone works started deliveries in April, 1937.

Tastefully streamlined Engines 1400-1409 became class I-5. Their 80-inch drivers drew power from 22x30 cylinders, the long stroke assuring rapid acceleration in the face of numerous bridge and other speed restrictions on the road's famed Shore Line. With ample boilers supplying 285 pounds pressure, the

Raymond W. Brown collection

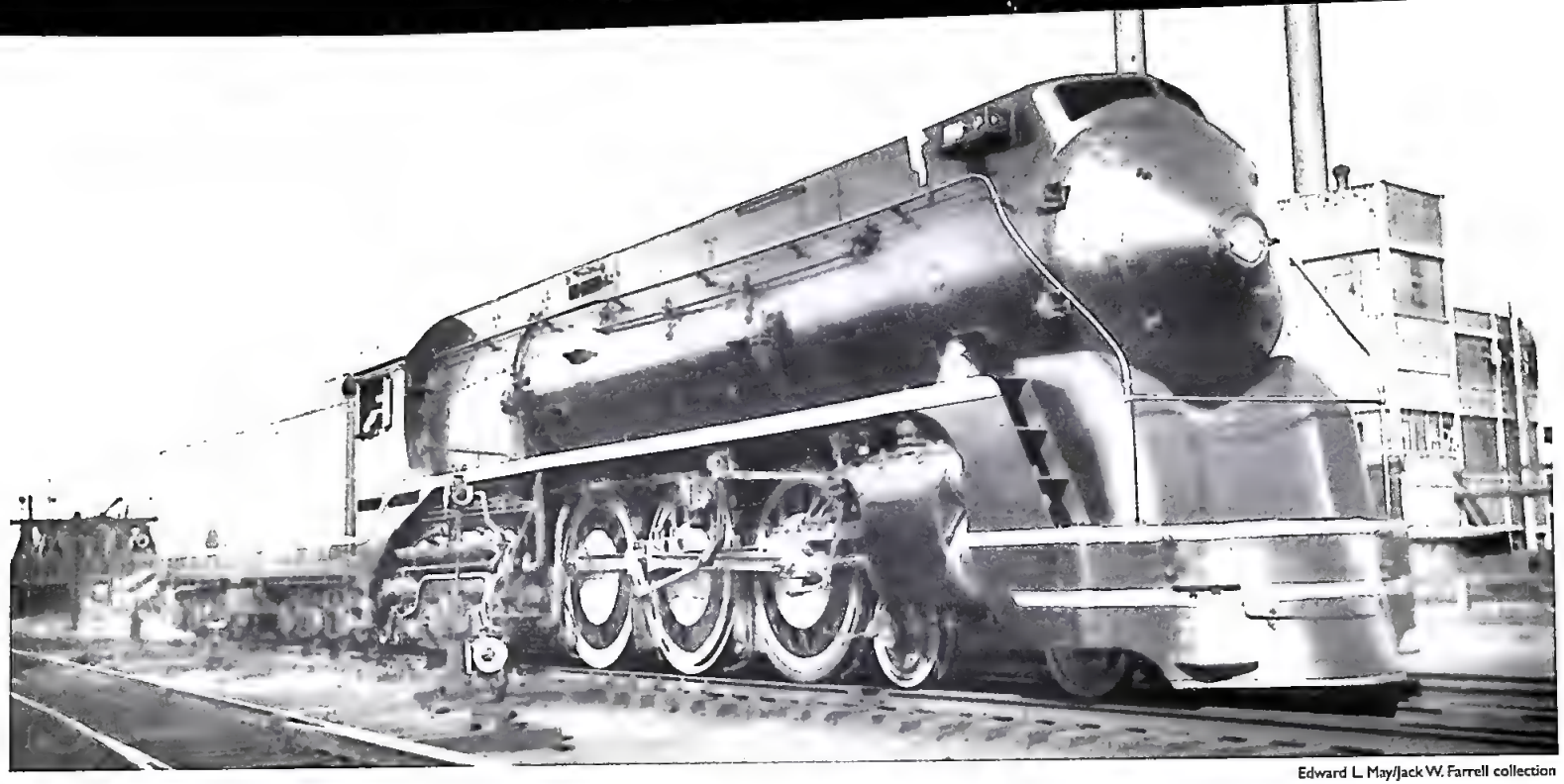
Hudson 1400 wears its original paint scheme above at Boston in early 1937, but was soon given a new look below, wearing a New Haven trademark on the tender side and a smaller version ahead of the cylinder at Readville, Mass., October 17, 1937.

George E. Votava



Raymond W. Brown collection

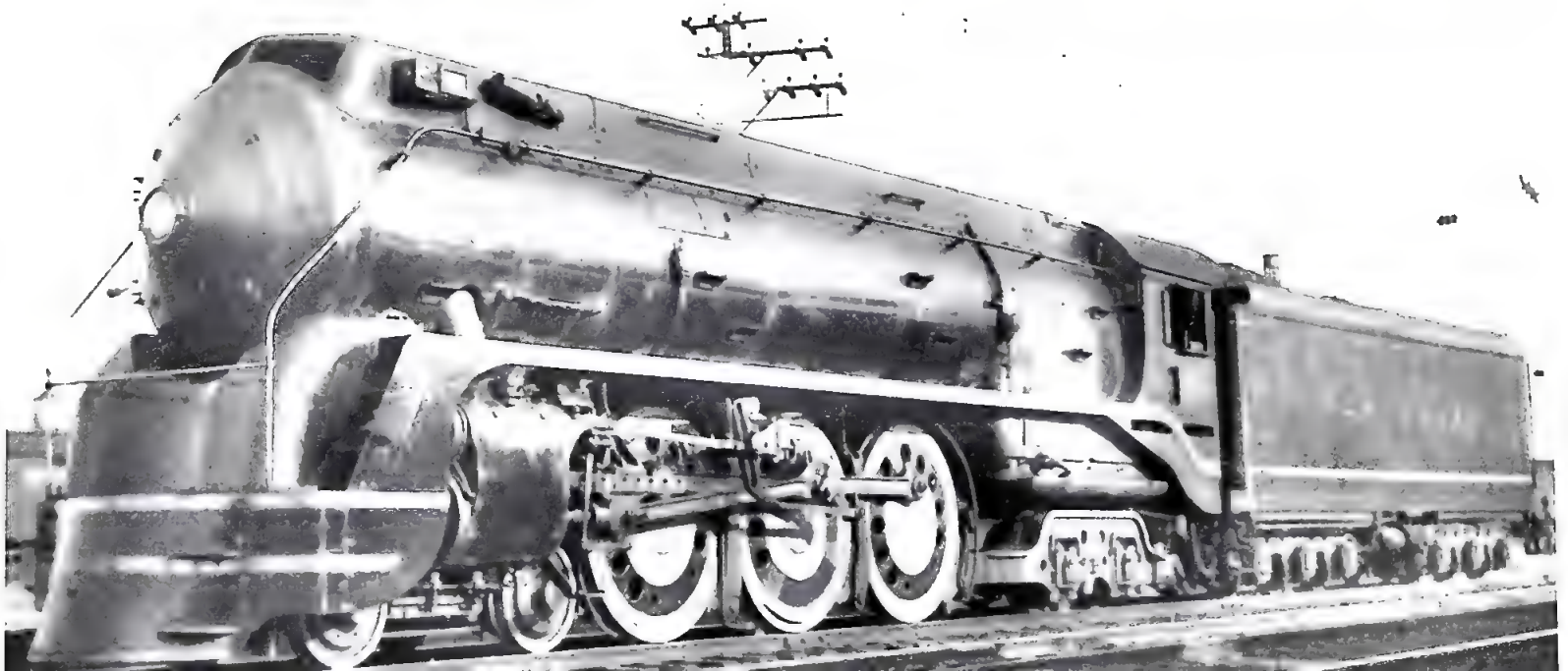
At New Haven's Cedar Hill Engine Terminal, freshly serviced Hudson 1402 stands in front of an I-4 Pacific, September 4, 1938.

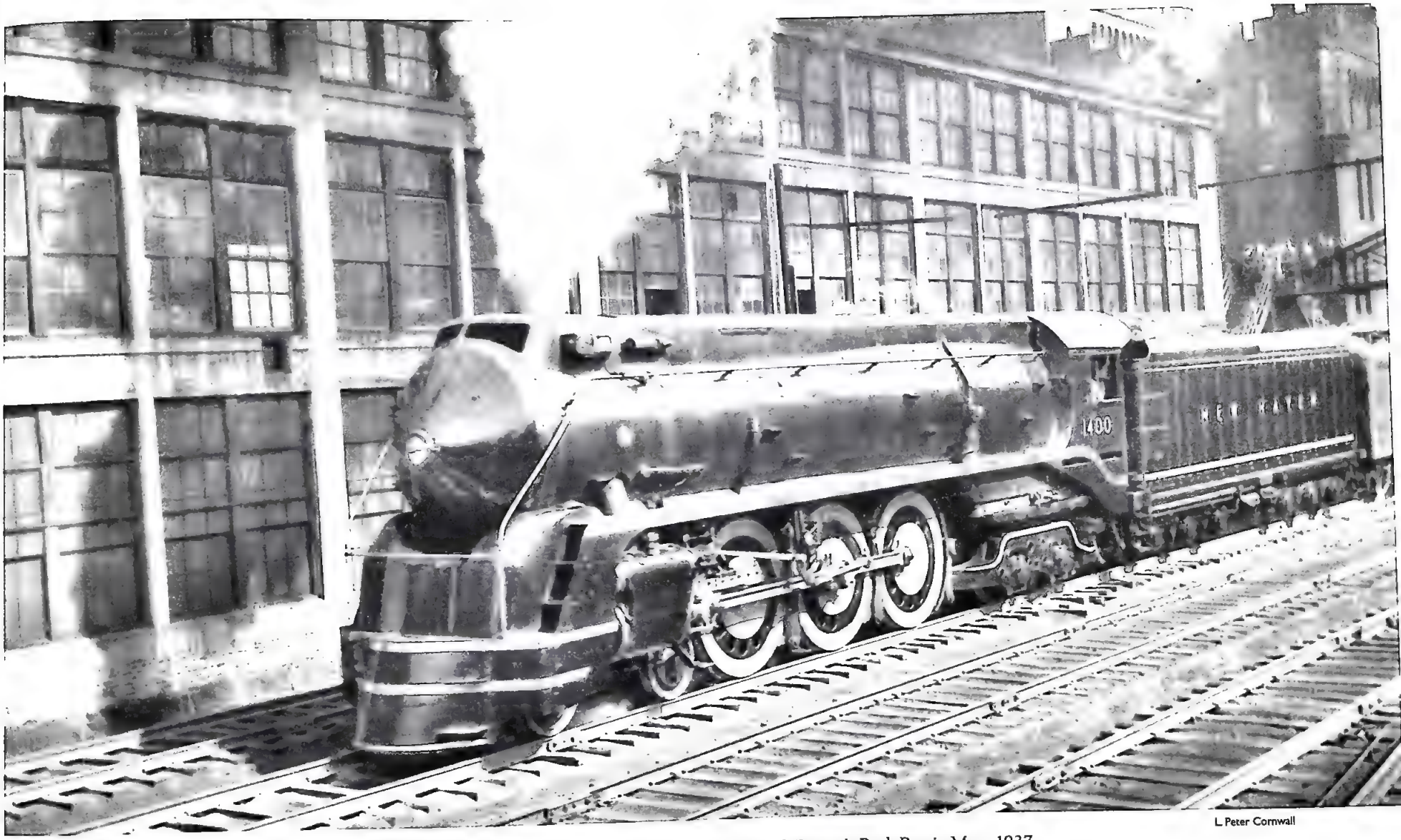


Edward L. May/Jack W. Farrell collection

Engine 1400 (above), Boston, September 6, 1937. Engine 1408 (below), New Haven, July 10, 1938

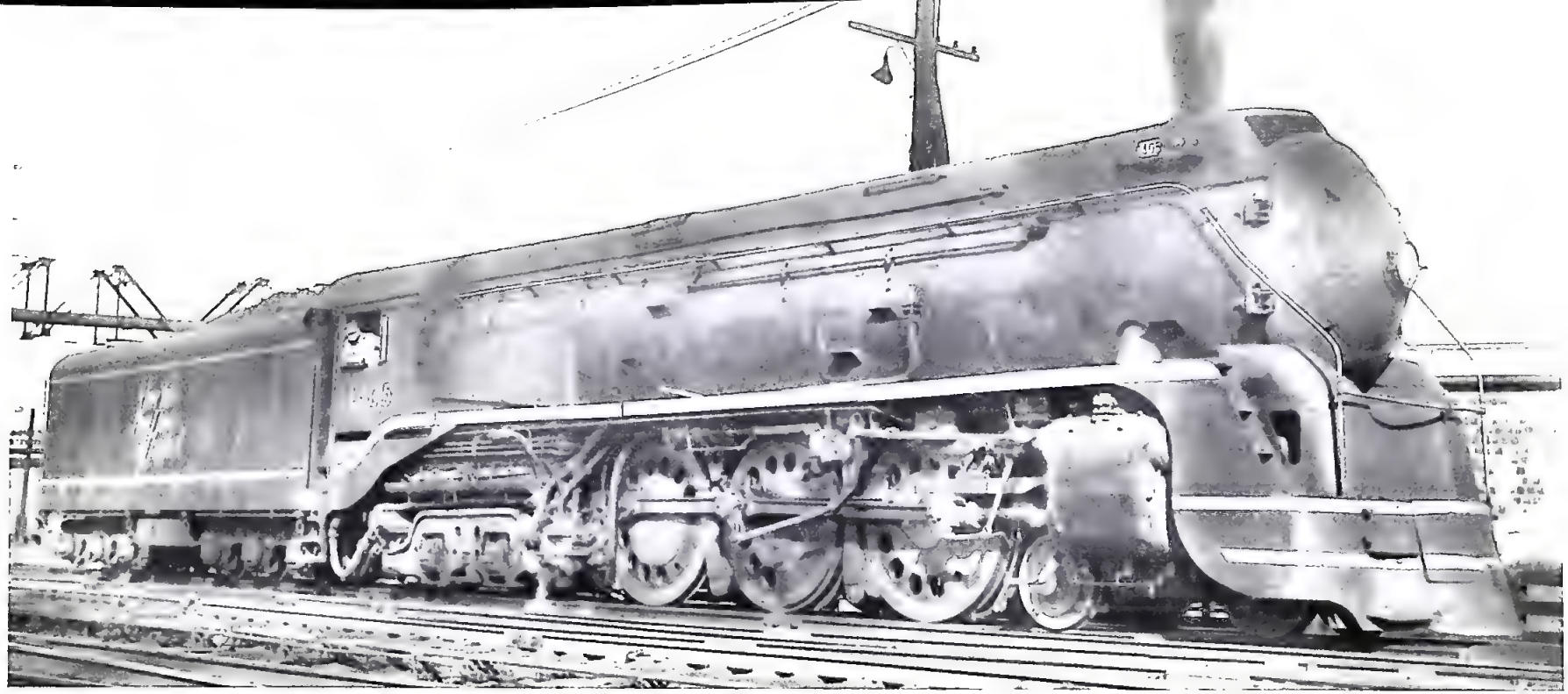
Robert F. Collins





L. Peter Cornwall

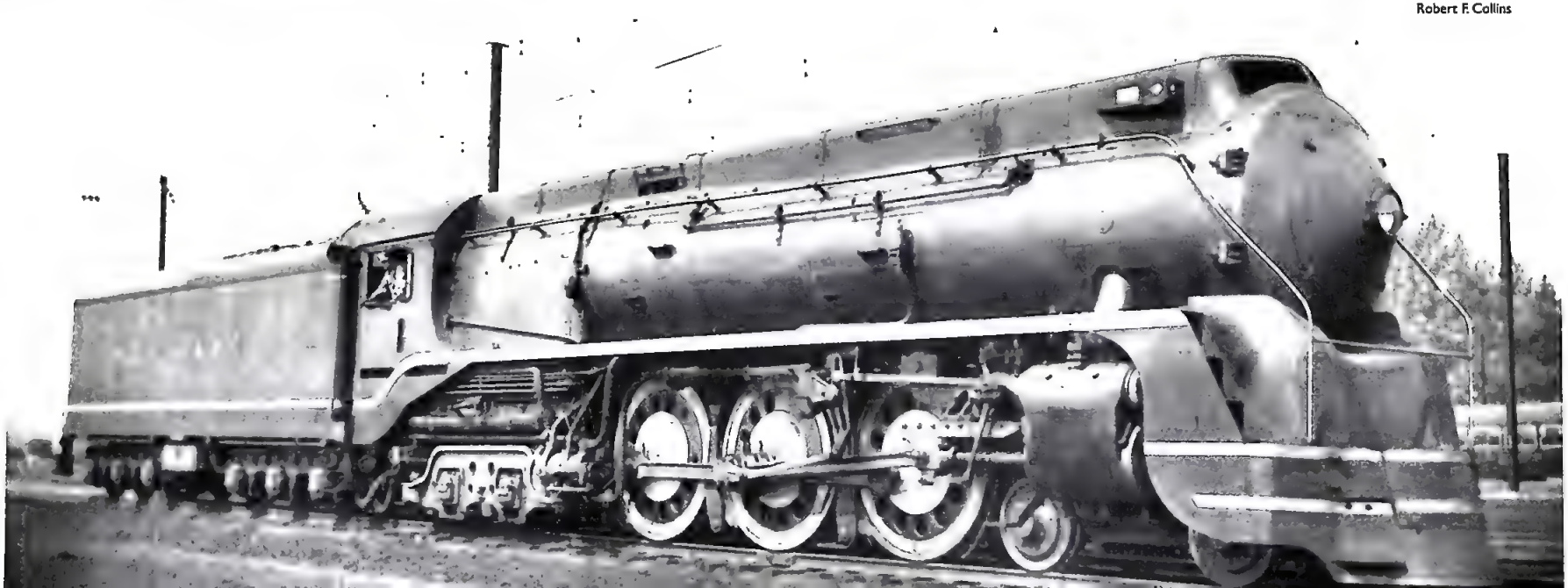
On an early run after breaking in, a shiny new 1400 leads Train 11, The Bay State, through Boston's Back Bay in May, 1937.



Charles T. Felstead/William A. Raia collection

Paint contrasts at Boston: The 1405 (above) wears a large tender trade mark that became the standard practice, September 20, 1947. Below at New Haven on July 10, 1938, 1404 's tender bears the prior "New Haven" style.

Robert F. Collins



Robert F. Collins

Fresh out of Boston, 1409 speeds through Forest Hills, Mass. with the 13 cars of the New Haven's flagship train, Number 23, The Yankee Clipper.

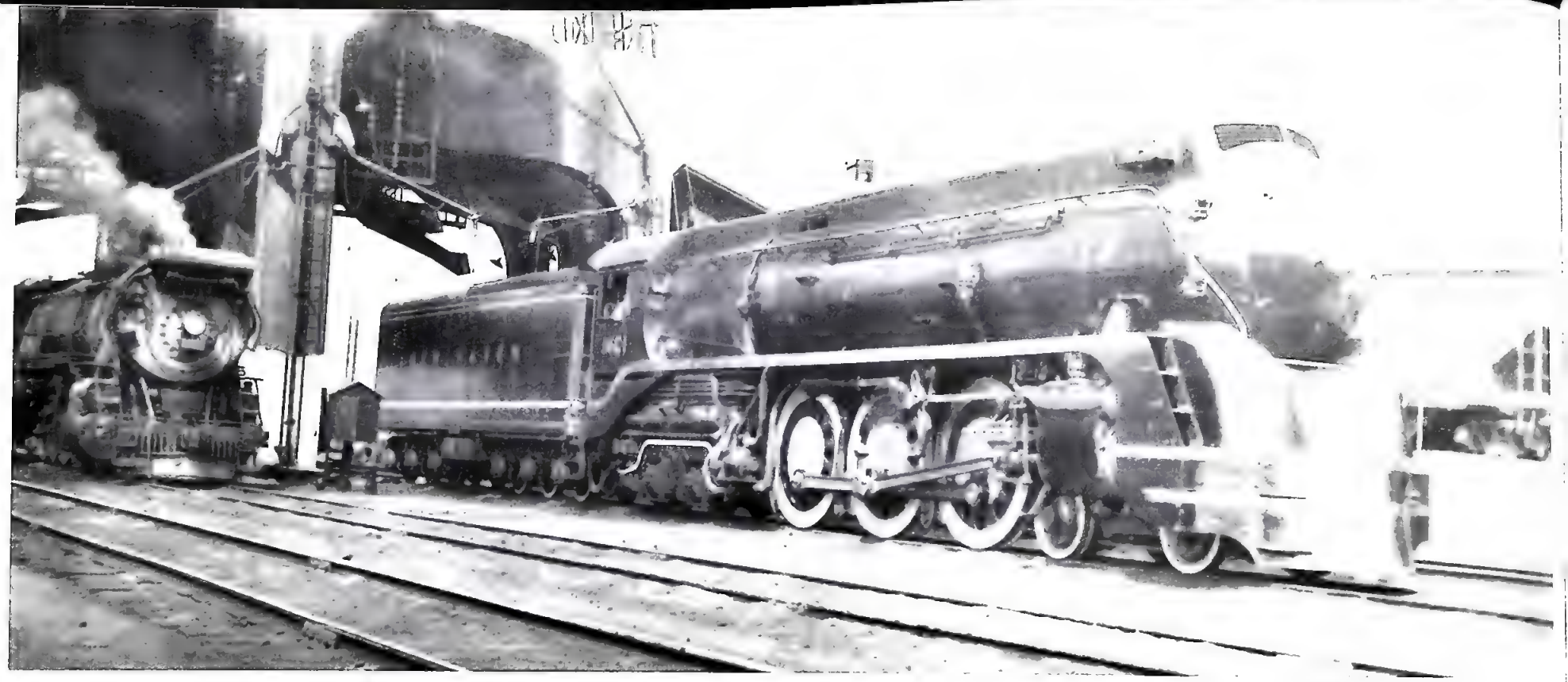
resultant 44,000 pounds tractive force brought pulling power that reduced extra sections and eased dispatchers' lives.

Their cast frames included cylinders, air reservoirs, and other parts, minimizing maintenance. Roller-bearing mounted driver axles and advanced lubrication systems helped to keep engines on the road over longer hours. Consequently, the ten 1400s of class I-5 replaced a greater number of I-4 Pacifics, taking over the principal trains between New Haven and Boston. Careful schedule planning made this possible, including maintenance time, with spare engines taking Springfield runs when not needed on the Shore Line.

As with most power, they experienced a period of break-in and discovery. For a time, they suffered some driver bounce at high speed. This proved hard on both track and locomotives. Careful retuning of the disc drivers' counterbalance weights solved the problem. The I-5s were known thereafter as smooth riders. More than that—they became known for speeds above and beyond those ostensibly permissible. On the New Haven as on many other roads, when trains on hot schedules became late, management was not necessarily anxious to know how fast an engineer was rolling his charge.

The 1400s carried Hancock turbo-injectors rather than feedwater heaters. While exhaust steam injectors were somewhat less efficient, they were also easier to maintain and lower in cost, a trade-off seen on such other roads as the Great Northern and the Union Pacific. The Hancock units, too, required some early attention to achieve smooth performance.

When delivered, there was an attempt to christen Class I-5 the "Shore Line" type. Before long, the 4-6-4 name long applied elsewhere, "Hudson," was accepted on the New Haven, too.



Raymond W. Brown collection

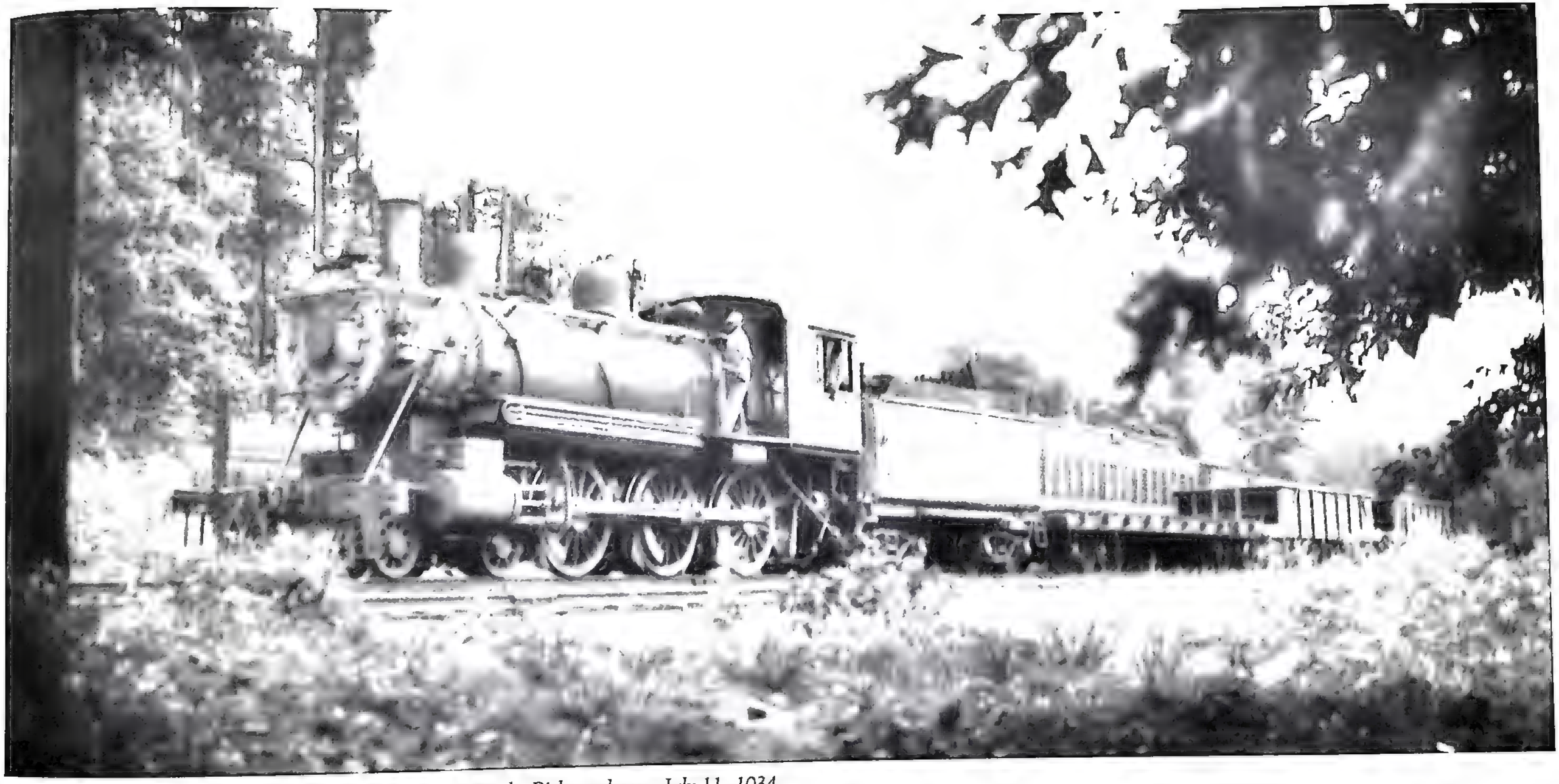
At New Haven's Cedar Hill yard coaling facility is recently delivered Hudson 1401 (above), July 4, 1937. Below, 1408 rolls west at Readville on May 21, 1937 with Train 11, The Bay State, *its consist including a combination car, four coaches, Diner, parlor, and a parlor-observation car.*

William Lichtenstern/Jack W. Farrell collection

George E.Votava

Westbound at Branford, Conn., 1406 leads Train 175, The Colonial, *trailed by an RPO car, baggage car, five coaches, diner, and four Pullmans.*

Near Blackwood, Va., the Kelly camera found Interstate R. R. 21, one of the road's two 2-8-8-2 USRA-style mallets, eastbound with a 21-car coal drag on November 18, 1952.



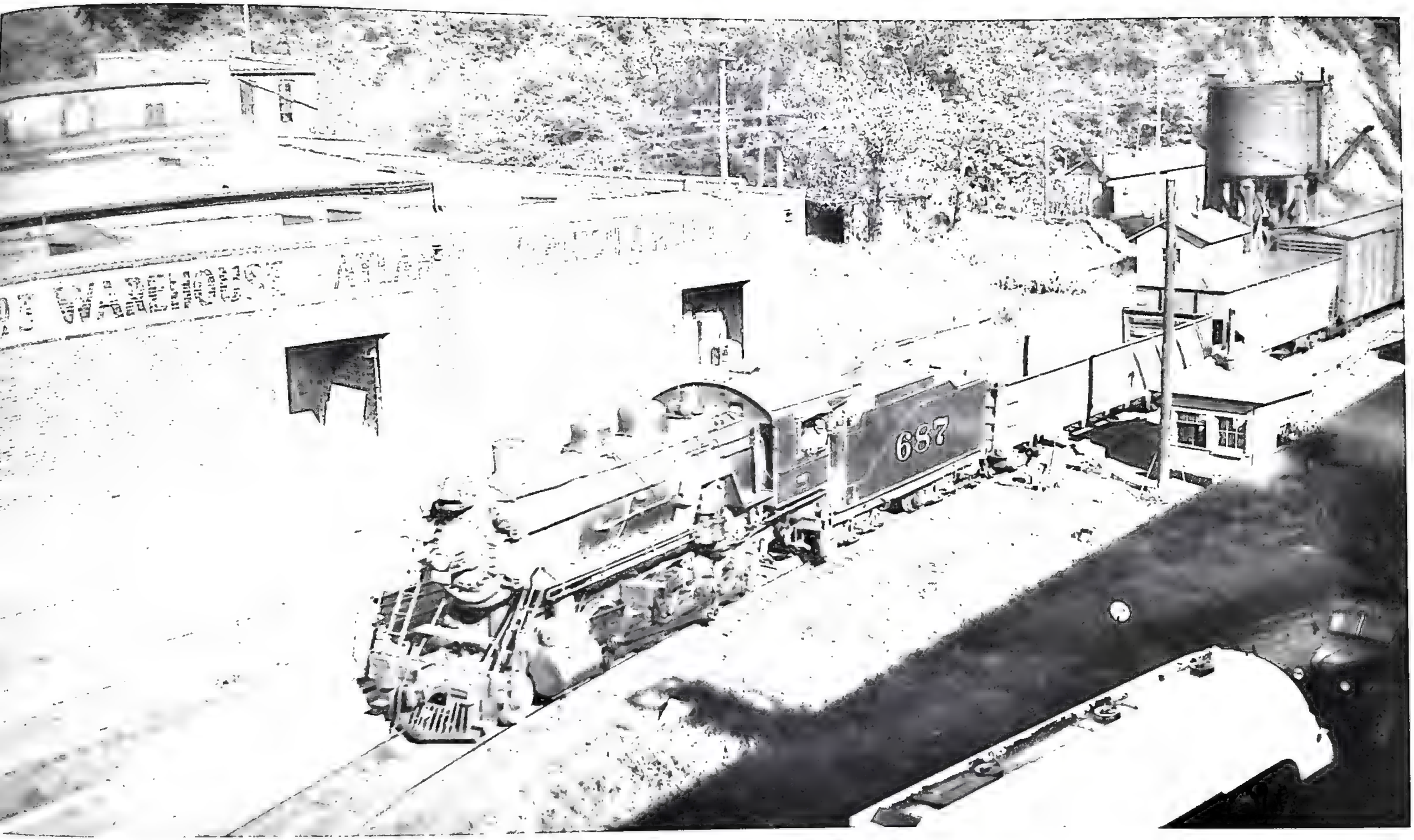
Atlantic Coast line 355 fronts a work extra in the Richmond area, July 11, 1034.

PHOTOS BY JULIAN KELLY

With long experience as both agent and towerman on the Chesapeake & Ohio as well as the Richmond, Fredericksburg & Potomac, Julian Kelly was also active as a locomotive photographer.

Having an eye for effective backgrounds, Photographer Kelly caught many train images where both lighting and subject worked well for his camera. As is evident in this folio, he also had a penchant for capturing the unique power of short lines and industrial lines.

Nelson & Albemarle 11 (above), a 2-4-2t, pauses on C&O tracks at Warren, Va. ca. 1951. Gray Lumber Co. 26 (below), a three-foot gauge 2-6-2, is at Waverly, Va. On March 27, 1952.



Southern 2-8-0 687, at 28th Street in Richmond, Va., returns with the West Point train, September 9, 1946.

Southern 2-8-0 880 appears above leaving West Point, Va., October 19, 1948, and below on the West Point train north of Meadow, Va., October 17, 1948.

C&O Mikado 1243 (above) rolls a coal drag east of Westham, Va., February 21, 1949. Below, Consolidation 893 doubleheads train 10 with Pacific 453, hitching a ride home from a shop visit to Richmond's Fulton yard on October 10, 1949.

Engine 1635, one of C&O's famed Allegheny types, is at Milepost 80, December 26, 1946.

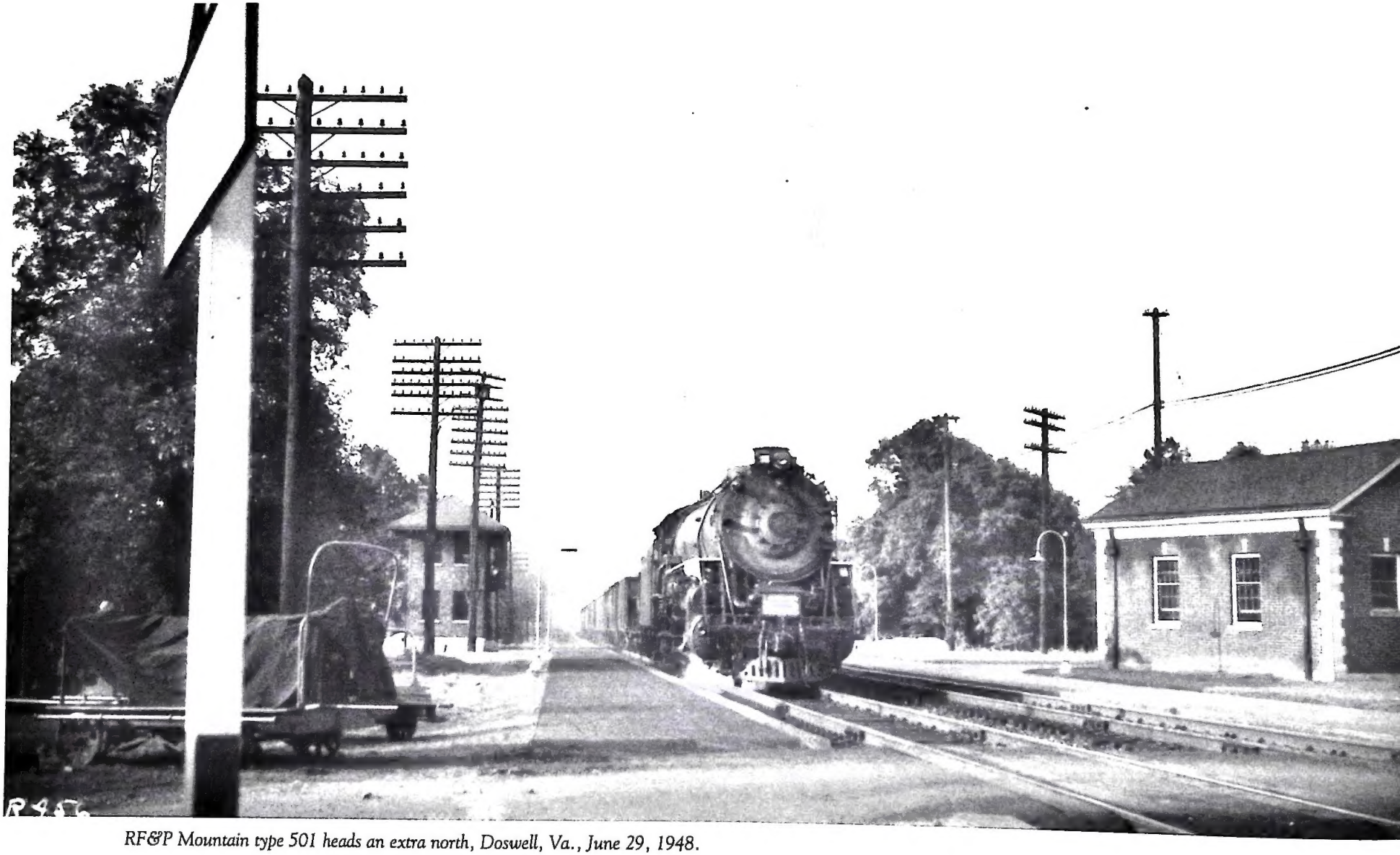
C&O Mikado 1215 (above) passes Westham, Va., May 2, 1948. C&O 2003 (below), formerly a Chicago & Eastern Illinois 2-10-2, is at Richmond's Fulton yard, May 30, 1946.

East of Richmond, C&O Texas type 3029 leads a coal drag on November 11, 1950.

Crossing the high bridge at Glen Lynn, Va. is Virginian 4-6-2 215 with Train 4 on August 26, 1951.

Western Maryland 4-6-6-4 1207 readies for a westbound departure from Hagerstown, Md., September 3, 1944.

Richmond, Fredericksburg & Potomac 4-8-4 575 is on a northbound extra at Doswell, Va., November 7, 1945.



RF&P Mountain type 501 heads an extra north, Doswell, Va., June 29, 1948.

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